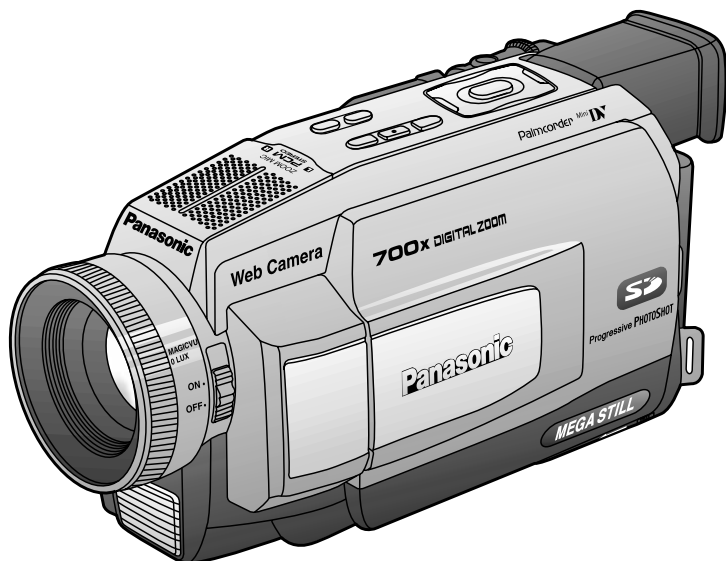


Digital Palmcorder®
MultiCam™ Camcorder

Panasonic®

Digital Video Camcorder
Operating Instructions

Models No. **PV-DV202**
PV-DV402



[PV-DV402 shown]

MultiMediaCard™



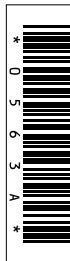
Mini **DV**

Before attempting to connect, operate or adjust this product, please read these instructions thoroughly.

Spanish Quick Use Guide is included.

Guía para rápida consulta en español está incluida.

For assistance, please call: 1-800-211-PANA(7262) or send e-mail to: consumerproducts@panasonic.com



LSQT0563A

Things You Should Know

Thank you for choosing Panasonic!

You have purchased one of the most sophisticated and reliable products on the market today. Used properly, we're sure it will bring you and your family years of enjoyment. Please take time to fill in the information below. The serial number is on the tag located on the underside of your Palmcorder. Be sure to **retain this manual** as your convenient Palmcorder information source.

Date of Purchase _____

Dealer Purchased From _____

Dealer Address _____

Dealer Phone No. _____

Model No. _____





Serial No. _____

Safety Precautions

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

Your ^{Mini} **DX** Palmcorder is designed to record and play back in Standard Play (SP) mode and Long (LP) mode.

It is recommended that only cassette tapes that have been tested and inspected for use in VCR machines with the ^{Mini} **DX** mark be used.

 CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN		 This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL		
		This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

The above markings are located on the appliance bottom cover.

Declaration of Conformity

Model Number : **PV-DV202/PV-DV402**
Trade Name : **Panasonic**
Responsibility Party : **Matsushita Electric Corporation of America**
Address : **One Panasonic Way Secaucus New Jersey 07094**
Telephone Number : **1-800-211-PANA(7262)**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when operated in a residential environment.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, use the equipment in another location and/or utilize an electrical outlet different from that used by the receiver.

If necessary, consult the dealer or an experienced radio/TV technician for help. You may find the booklet, 'Something About Interference' available from FCC local regional offices helpful.

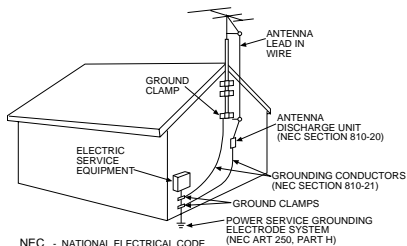
FCC Warning: To assure continued FCC compliance, use only the provided shielded interface cable when connecting digital video camcorder to computer in accordance with instruction herein. Also, any unauthorized changes or modifications to this equipment would void the user's authority to operate.

Important Safeguards

1. **Read Instructions** — All the safety and operating instructions should be read before the unit is operated.
2. **Retain Instructions** — The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** — All warnings on the unit and in the operating instructions should be adhered to.
4. **Follow Instructions** — All operating and maintenance instructions should be followed.
5. **Cleaning** — Unplug this video unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a dry cloth for cleaning.
6. **Attachments** — Do not use attachments not recommended by the video product manufacturer as they may be hazardous.
7. **Water and Moisture** — Do not use this video unit near water — for example near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
8. **Accessories** — Do not place this video unit on an unstable cart, stand, tripod, bracket, or table. The video unit may fall, causing serious injury to a child or adult, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video unit. Any mounting of the unit should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
9. **Ventilation** — Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video unit and to protect it from overheating. These openings must not be blocked or covered. Never place the video unit on a bed, sofa, rug, or other similar surface, or near or over a radiator or heat register. This video unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
10. **Power Sources** — This video unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For video units intended to be operated from battery power, or other sources, refer to the operating instructions.



11. **Grounding or Polarization** — This video unit may be equipped with either a polarized 2-wire AC (Alternating Current) line plug (a plug having one blade wider than the other) or 3-wire grounding type plug, a plug having a third (grounding) pin.
The 2-wire polarized plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
The 3-wire grounding type plug will fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.
12. **Power-Cord Protection** — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords of plugs, convenience receptacles, and the point where they exit from the unit.
13. **Outdoor Antenna Grounding** — If an outside antenna or cable system is connected to the video unit, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Part 1 of the Canadian Electrical Code, in USA Section 810 of the National Electrical Code, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.



14. **Lightning** — For added protection of this video unit receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video unit due to lightning and power-line surges.

Important Safeguards

15. **Power Lines** — An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
16. **Overloading** — Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
17. **Objects and Liquids** — Never push objects of any kind into this video unit through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind onto the video unit.
18. **Servicing** — Do not attempt to service this video unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
19. **Damage Requiring Service** — Unplug this video unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power-supply cord or plug is damaged.
 - b. If any liquid has been spilled into, or objects have fallen onto, the video unit.
 - c. If the video unit has been exposed to rain or water.
 - d. If the video unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video unit to its normal operation.
 - e. If the video unit has been dropped or the cabinet has been damaged.
 - f. When the video unit exhibits a distinct change in performance — this indicates a need for service.
20. **Replacement Parts** — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
21. **Safety Check** — Upon completion of any service or repairs to this video unit, ask the service technician to perform safety checks to determine that the video unit is in safe operating order.

Precautions

USE & LOCATION

TO AVOID SHOCK HAZARD ... Your Palmcorder and power supply should not be exposed to rain or moisture. Do not connect the power supply or operate your Palmcorder if it gets wet. Your Palmcorder has been designed for outdoor use, however it is not designed to sustain direct exposure to water, rain, sleet, snow, sand, dust, or direct splashing from a pool or even a cup of coffee. This action could permanently damage the internal parts of your Palmcorder. Do not attempt to disassemble this unit. There are no user serviceable parts inside. Unplug your Palmcorder from the power supply before cleaning.

DO NOT AIM YOUR PALMCORDER AT THE SUN OR OTHER BRIGHT OBJECTS

DO NOT LEAVE THE PALMCORDER WITH THE EVF AIMED DIRECTLY AT THE SUN AS THIS MAY CAUSE DAMAGE TO THE INTERNAL PARTS OF THE EVF

DO NOT EXPOSE YOUR PALMCORDER TO EXTENDED HIGH TEMPERATURE ... Such as, direct sunlight, inside a closed car, next to a heater, etc... This action could permanently damage the internal parts of your Palmcorder.

AVOID SUDDEN CHANGES IN TEMPERATURE ... If the unit is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the unit.

DO NOT LEAVE YOUR PALMCORDER OR THE POWER SUPPLY TURNED ON WHEN NOT IN USE.

STORAGE OF YOUR PALMCORDER ... Store and handle your Palmcorder in a manner that will not subject it to unnecessary movement (avoid shaking and striking). Your Palmcorder contains a sensitive pick-up device which could be damaged by improper handling or storage.

CARE

TO CLEAN YOUR PALMCORDER ... Do not use strong or abrasive detergents when cleaning your Palmcorder body.

TO PROTECT THE LENS ... Do not touch the surface of the lens with your hand. Use a commercial Palmcorder lens solution and lens paper when cleaning the lens. Improper cleaning can scratch the lens coating.

TO PROTECT THE FINISH OF YOUR PALMCORDER ... Before handling your Palmcorder, make sure your hands and face are free from any chemical products, such as suntan lotion, as it may damage the finish.

Table of Contents

Things You Should Know	2
Important Safeguards	3
Precautions	4
Before Using	6
• Easy Cassette Eject	7
Quick Guide	11
Supplying Power	14
Setting the Clock	16
Using the Palmcorder Menu	17

Camera Recording	18
• Simple Recording	18
• Digital PhotoShot™ Mode	20
• Zoom	21
Special Effect Features	23
Advanced Settings	28

Playback Your Recordings	32
Special Effect Features	34

Digital Features	40
Editing Features	44
Card Features	48
W PC Connection	
• Transferring Your Images (Windows)	55
• PHOTOVU/MPEG4 Movie Messenger™ System	58
• Transferring Your Images (i.LINK) (Windows)	72
• PHOTOVU/MPEG4 Movie Messenger™ System (i.LINK)	73
• Palmcorder USB Device Driver/SD Drive	75
• Palmcorder File Converter	78
• Web Camera (For Windows XP users/For Windows 98SE, Me, 2000 users)	80
• Warning Indications	89
M PC Connection	
• Transferring Your Images (Macintosh)	90

Palmcorder Accessory System	92
Palmcorder Accessory Order Form	93
Notes On Operations	94
Specifications	96
Before Requesting Service	97
On-Screen Display (OSD)	99
Request for Service Notice	101
Limited Warranty	102
Servicenter List	103
Spanish Quick Use Guide/Guía Para Uso Rápido	104
MENU OSD	108
Electronic Viewfinder/LCD Monitor Indications	112
Index of Controls	116
Index	119

Before Use

Camera

VCR

Special Features

For Your Information

Before Using

This Operating Instructions book is designed for use with models **PV-DV202** and **PV-DV402**. The **PV-DV402** is the model used for illustrative purposes. Features may vary, so please read carefully.

Differences between models

Model Number	PV-DV202	PV-DV402
LCD Monitor	63.5 mm (2.5 inch) Liquid Crystal Display	88.9 mm (3.5 inch) Liquid Crystal Display
MagicVu™ IR Filter (0Lux)	NO	YES
MIC IN EXTERNAL	NO	YES

Unpack your Palmcorder

1 pc. AC Adaptor (PV-DAC11) with AC Cable and DC Cable



1 pc. 8 MB Memory Card (RP-SD008BMKO)



1 pc. Battery Pack (CGR-D08/ CGR-D08R)



1 pc. A/V Cable (LSJA0280)



1 pc. Lens Cap (LSYF0518) with Lens Cap Strap (LSGQ0066)



1 pc. USB Cable (K1HA05CD0001)



1 pc. Shoulder Strap (LSFC0016)



1 pc. Audio Adaptor (LSJP0829)



1 pc. IR Remote Control (LSSQ0294) with Battery (CR2025)



1 pc. CD-ROM of Driver Software for Windows 98SE/Me/2000/XP and Macintosh; USB Device Driver for Windows 98SE/Me/2000/XP; PHOTOVU/MPEG4 Movie Messenger™ System for Windows 98SE/Me/2000/XP; Built-in SD Drive for Macintosh; ArcSoft Software for Windows 95/98/Me/2000/XP and Macintosh (LSFT0492)



Microsoft®, Windows® and Windows Media are registered trademarks of Microsoft in the United States and other countries.

Macintosh, iMac, iBook, PowerBook, Power Macintosh, Power Mac, and Mac are trademarks or registered trademarks of Apple Computer, Inc.

Intel® Pentium® is a registered trademark.

i.LINK is a trademark.

PHOTOVU/MPEG4 Movie Messenger™ System is a registered trademark.

IBM is a registered trademark of IBM Company.

MultiMediaCard is a registered trademark.

SD is a trademark.

Before Using

Record Speed/Playback Time

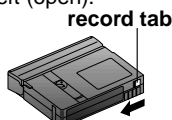
Use only those tapes having the Mini DV logo indicating the 6.35 mm digital standard.

Cassette type	Record Speed/ Playback time	
	SP	LP
AY-DVM30EA	30 minutes	45 minutes
AY-DVM60EA	60 minutes	90 minutes
AY-DVM80EA	80 minutes	120 minutes

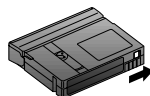
Erase Protection

Cassettes have a sliding record tab to ensure recordings are not accidentally erased.

- 1 To prevent accidental erasure:**
Slide the tab to the left (open).

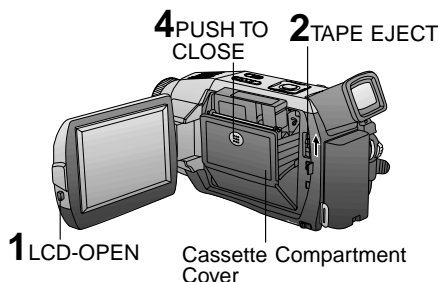


- 2 To record again:**
Slide the tab to the right (close).



Easy Cassette Eject/Insertion

- If the Palmcorder is connected to a power source, the cassette can be inserted and ejected without turning the Palmcorder on.



Before you begin

- Connect the Palmcorder to a power source. (pp. 14, 15)

- 1 Press LCD-OPEN** to unlock the LCD monitor, and **swing it fully open**.

- 2 Slide TAPE EJECT** to open the Cassette Compartment Cover.

- 3 Insert a cassette** record tab up, window side facing out.

- 4 Press PUSH TO CLOSE** to close the Cassette Compartment Cover.

To remove the cassette...

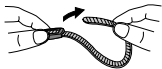
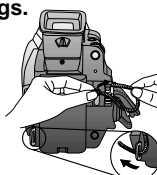
Slide TAPE EJECT to open the Cassette Compartment Cover and pull the cassette tape straight out.

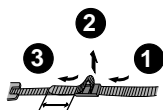
Note

- When inserting the cassette, make sure it is facing the right direction and then push it in completely.

Before Using

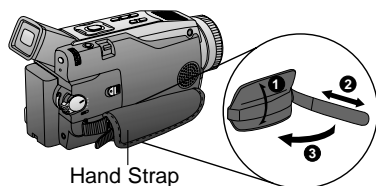
Attaching the Shoulder Strap

- 1 Undo the two strap ends from their buckles.**

- 2 Thread the strap ends through the Strap Attachment Rings.**

- 3 Reinsert the strap ends through their buckles.**
 - Make sure the straps are not twisted.



Hand Strap

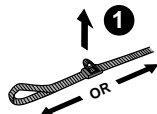
Adjust the length of the Hand Strap to the size of your hand as illustrated.



Hand Strap

Adjust the Length

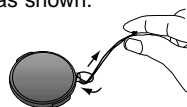
- 1 Loosen the strap from the Buckle and create a loop.**
- 2 Pull the strap firmly through the Buckle to shorten or lengthen the strap.**



Lens Cap

Attaching the Lens Cap Strap:

Thread the Lens Cap Strap through the Strap Attachment Ring as shown.



Attaching the Lens Cap Cord to the Hand Strap:

Remove the Hand Strap from the front clasp and thread the Strap through the loop in the Lens Cap Cord. Reattach the Hand Strap.



Before Using

Using the Built-in Light

To brighten the natural colors in a scene.



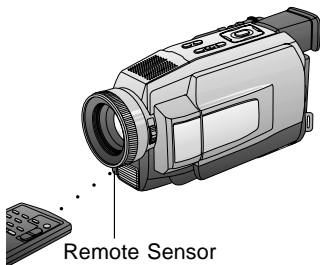
Built-in Light

Note

- Using Light reduces battery time.
- Provide adequate ventilation if using Light in a hot environment for a long time.
- Set LIGHT to OFF when not in use.
- When replacing the bulb, see page 94.

Remote Control

You can operate the major functions of your Palmcorder from up to approximately 5 m (16 feet) away (indoors). Aim the IR Remote Control toward the front of the Palmcorder and press the desired buttons (Remote Sensor is located under the lens).



Remote Sensor

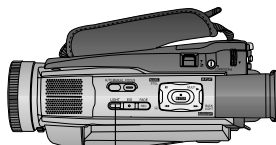
Controlled Functions

- Rec/Pause (p. 18)
- Tele (Zoom) (p. 21)
- Wide (Zoom) (p. 21)
- Date/Time (p. 112)
- Reset (p. 45)
- PhotoShot (p. 20)
- Display On TV (p. 39)
- Counter/Time Code (p. 113)
- Audio Dubbing (p. 44)
- Record (p. 47)
- Menu (p. 17)
- Play (p. 32)

Before you begin

- Connect the Palmcorder to a power source. (pp. 14, 15)
- Set POWER to CAMERA or M-CARD.

- 1** Hold down **LIGHT** for more than 0.7 seconds to turn **ON** or **OFF**.
- "LD" will appear on the screen.



1 LIGHT

Caution

This light becomes hot during operation. Make sure nothing covers the light during operation.

To operate Camera functions:

Set POWER to CAMERA.

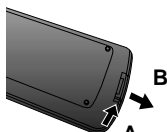
To operate VCR functions:

Set POWER to VCR.

- FF/Search (p. 34)
- REW/Search (p. 34)
- Pause/Select (pp. 16, 17, 36)
- Stop/Set (pp. 16, 17, 32, 47)
- Slow/Frame Advance (Forward) (pp. 35, 36)
- Slow/Frame Advance (Backward) (pp. 35, 36)
- Index Search (Forward) (pp. 36, 37)
- Index Search (Backward) (pp. 36, 37)
- Speaker Volume (p. 33)

Before Using

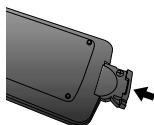
Replace the Battery



1 While pressing the tab in the direction of the arrow (A) with your fingernail, pull out the Battery Tray (B).



2 Insert the battery into the Battery Tray with the ⊕ mark facing up.
Do not reverse the polarity.



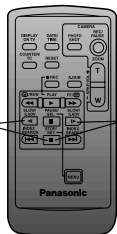
3 Insert the Battery Tray.

Replace battery with Panasonic PART NO. VSBW0004 (CR2025) only. Use of another battery may present a risk of fire or explosion.

Caution: battery may explode if mistreated. Dispose of used battery properly. Keep away from children. Do not recharge, disassemble or dispose of in a fire.

Remote Controlling Two Palmcorders

You can control any two Panasonic Palmcorders with one Remote control. In order for the remote to distinguish between the two units, it is necessary to set one of the Palmcorders to VCR 2. On the remote, press VCR 1 or VCR 2 to control the desired Palmcorder.

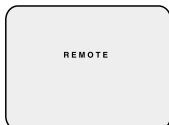


For VCR 2 :
Press these buttons at the same time.

For VCR 1 :
Press these buttons at the same time.

Note

- When the Palmcorder and remote are not set to the same mode (VCR1 or VCR2), "CHECK REMOTE MODE (REMOTE)" will appear.



- 1 Set POWER to VCR or CAMERA.**
 - The POWER Lamp lights red.
 - Be sure POWER is fully turned on VCR or CAMERA position.
- 2 Press MENU** to display the VCR or CAMERA mode menu screen.
- 3 Rotate JOG KEY** to select **SET-UP** in the CAMERA mode menu screen or **PLAY MODE** in the VCR mode menu screen, then **press JOG KEY** to display the CAMERA SET-UP or VCR PLAY MODE menu screen.
- 4 Rotate JOG KEY** to select **REMOTE**, and then press JOG KEY to select VCR 2 (Menu OSD: pp. 109, 110). Leave the other Palmcorder set to VCR1.
- 5 Set the Remote Control to VCR 1 or VCR 2** to correspond with the Palmcorder you wish to control. (See above left.)
 - After replacing the Remote Control Battery, the remote will default to VCR 1.

Insert the Battery Pack

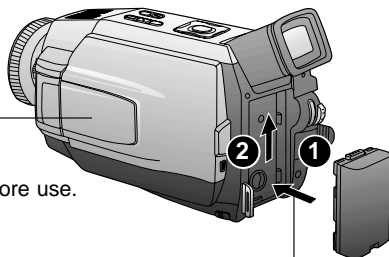
Before you begin

- Charge the Battery. (p. 14)

Protection Film

Note

- Remove the Protection Film before use.

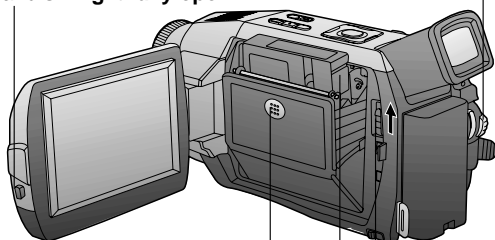


- 1** Insert the Battery Pack and slide it up until it locks with a click.

Insert Cassette

These Palmcorders are equipped with the Easy Cassette Eject System so it is easy to insert or remove tapes, even when on a tripod. (p. 7)

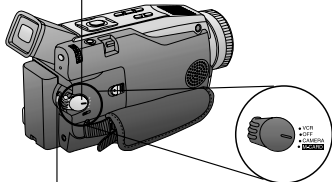
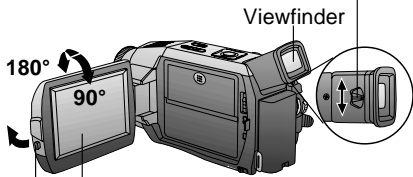
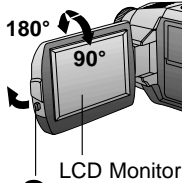
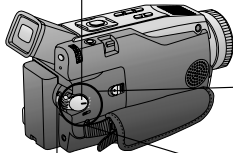
- 1** Press **LCD-OPEN** to unlock the LCD monitor, and **swing it fully open**.
- 2** Set **POWER** to **VCR** or **CAMERA**.
- 3** Slide **TAPE EJECT** to open the Cassette Compartment Cover.
- 4** Insert a cassette record tab up, window side facing out.
 - Make sure the record tab is closed. (p. 7)
- 5** Press **PUSH TO CLOSE** mark to close the Cassette Compartment Cover.



Quick Guide

Camera Recording

When the LCD monitor is fully open, the Viewfinder automatically turns OFF.

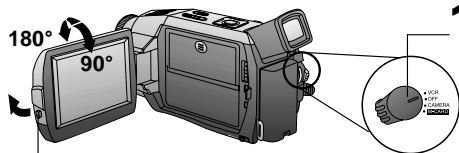
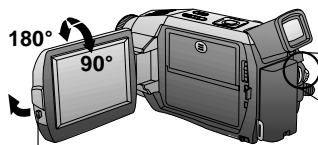
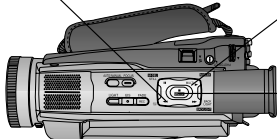


- 1 Set POWER to CAMERA.**

- 2 Adjust the Vision Adjustment Control to your eyesight.**

- 3 Press LCD-OPEN to unlock the LCD monitor. Swing it fully open and adjust the angle.**

- 4 Press REC/PAUSE to start recording. Press REC/PAUSE again to pause recording.**


To Watch Playback in the LCD (Liquid Crystal Display)

When the LCD monitor is fully open, the Viewfinder automatically turns OFF.

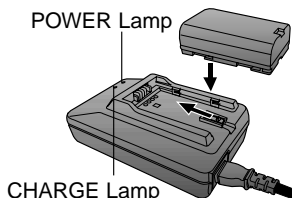
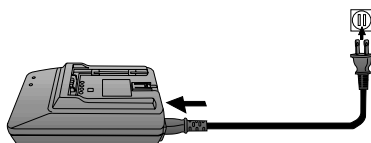
Before you begin

- Charge the Battery. (p. 14)

- 1 Set POWER to VCR.**

- 2 Press LCD-OPEN to unlock the LCD monitor. Swing it fully open and adjust the angle.**

- 3 Press ◀ (REW) to rewind the tape.**

- 4 Press ▶ (PLAY) to start playback.**

- 5 Press ■ (STOP) to stop playback.**


Supplying Power

Charge the Battery Pack on the AC Adaptor



1 Connect and plug in the Power Cord as shown.

- POWER Lamp will light.
- Remove the DC Cable, if attached, from the adaptor.

2 Attach the Battery as shown to charge.

- CHARGE Lamp lights up. It goes out when charging is complete (approx. 1 hour). Expect approx. 1 hour 30 minutes of operation (EVF usage) when fully charged.

3 Remove the Battery.

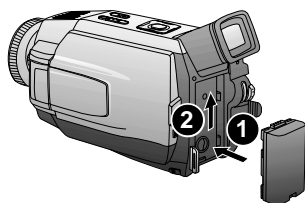
Slide the Battery out and then lift up.

Note

About the Flashing of the CHARGE Lamp

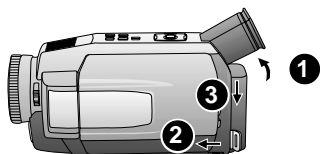
- Charge the Battery within an ambient temperature range of 10 °C (50 °F) and 30 °C (86 °F).
 - If charging is done in extreme low or high temperatures, Battery charge time increases.
- CHARGE Lamp flashes when...**
- The Battery is being charged, but charging is taking longer than normal.
 - Charging is not possible. Remove the Battery once, wait a short time, then re-attach it for charging.

Insert the Battery Pack



1 Insert the Battery Pack and slide it up until it locks with a click.

Remove the Battery Pack



BATT RELEASE

1 Tilt Viewfinder upward.

2 Remove the Battery Pack and slide the Battery downward while sliding the BATT RELEASE.

Supplying Power

Battery Care

Caution:

- Charge only with specified charger.
- Charge the Battery within an ambient temperature range of 10 °C (50 °F) and 30 °C (86 °F).
- The Battery may be warm after charging or just after use. This is normal.
- Do not use an insufficiently charged or worn out Battery.
- If charging is done in extreme low or high temperatures, Battery charge time increases.

Safety precautions:

- Do not place the Battery near, or dispose of in fire.
- Do not directly connect (short circuit) the positive (+) and negative (-) terminals.
- Never attempt to disassemble or reassemble the Battery.

To avoid damage to the Battery:

- Do not drop or jar the Battery.
- Use the Battery with specified models only.
- If the Battery is used in extremely high temperatures, a safety device will automatically prevent operation.

To insure longer battery life:

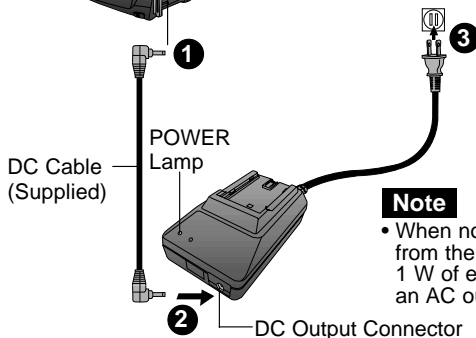
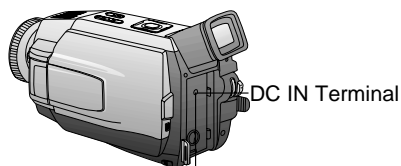
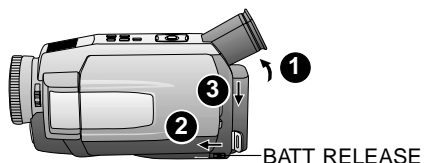
- While not in use, remove Battery from the Palmcorder and AC Adaptor and store in a cool, dark, dry place. If you leave the Battery in the Palmcorder or on the AC Adaptor, the Battery will no longer be rechargeable.
- Keep the Battery terminals clean.

U.S.A. CONSUMERS: ATTENTION:



A lithium ion/polymer battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

Use AC Adaptor



- 1 Slide the Battery downward while sliding BATT RELEASE to remove the Battery Pack. (p. 14)
- 2 Insert the DC Cable into the DC IN Terminal.
- 3 Connect the other end of the DC Cable to the AC Adaptor as shown.
- 4 Plug in the AC Adaptor.
 - The POWER Lamp on the AC Adaptor lights up.

Note

- When not in use, unplug the AC Adaptor from the AC outlet. (AC Adaptor consumes 1 W of electric power when plugged into an AC outlet even when not in use.)

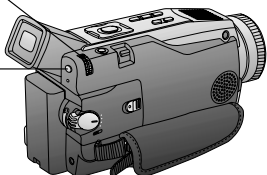
Setting the Clock

Set the Date and Time

The date and time is calculated, including leap year, up to DEC 31 2089.

2, 3, 4
JOG KEY

1 MENU



EXAMPLE:

YEAR : 2002



Push

MONTH : JAN



Rotate

MONTH : FEB

Note

- To make corrections, Press JOG KEY repeatedly to move back to an item and correct.
- A built-in Battery maintains clock operation. If the Palmcorder is not connected to a power source for a few months, the built-in battery may discharge and "CLOCK BATTERY" indication appears. (p. 99)

Before you begin

- Connect the Palmcorder to a power source. (pp. 14, 15)
- Set POWER to CAMERA or VCR.

1

Press **MENU** to display the Camera or VCR mode menu screen. (p. 17)

[CAMERA MENU]

[VCR MENU]

CAMERA MENU
1: FUNCTION
2: ADJUST
3: REC MODE
4: SET-UP
5: DISPLAY SETTING
6: LCD/EVF SETTING
7: PHOTO TITLE
· SELECT: ROTATE JOG KEY
· SET : PUSH JOG KEY
· EXIT : PUSH MENU KEY

VCR MENU
1: PLAY FUNCTION
2: REC MODE
3: PLAY MODE
4: MULTI SETTING
5: DISPLAY SETTING
6: LCD/EVF SETTING
· SELECT: ROTATE JOG KEY
· SET : PUSH JOG KEY
· EXIT : PUSH MENU KEY

2

Rotate **JOG KEY** to select **DISPLAY SETTING**, and then press **JOG KEY** to display the DISPLAY SETTING menu screen.

3

Rotate **JOG KEY** to select **CLOCK-SET**, and then press **JOG KEY** to set to ON. (Menu OSD: pp. 109, 111)

- The DATE/TIME SETTING menu is displayed.

4

Rotate **JOG KEY** to select YEAR, then press **JOG KEY** to fix and move to the next item. Likewise, set the month, day, hour, and minutes.

DATE/TIME SETTING
YEAR : 2002
MONTH : OCT
DAY : 18
HOUR : 8PM
MINUTE : 10
· SELECT: PUSH JOG KEY
· SET : ROTATE JOG KEY
· EXIT : PUSH MENU KEY

When DATE/TIME setting is completed, press **MENU** three times to start the clock and exit.

Using the Palmcorder Menu

The Palmcorder features three menu displays: one for CAMERA mode (recording), one for M-CARD (Memory Card Photo Mode) and one for VCR mode (Playback). (pp. 108~111)

- While the Menu screen is displayed, you cannot record on or play a tape.
- While recording, the Menu screen cannot be displayed.
- During playback, the Menu screen can be displayed.

Before you begin

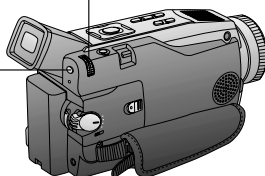
- Connect the Palmcorder to a power source. (pp. 14, 15)
- Set POWER to CAMERA or VCR.

2, A, B, C

JOG KEY

1, D

MENU



Displaying the MENU

- 1 Press **MENU** to display the CAMERA or VCR menu (according to the POWER setting).
- 2 Rotate **JOG KEY** to select a menu item.

Setting the MENU Items (EX. VCR Mode menu)

- A Press **JOG KEY** to set your selection.

- B Rotate **JOG KEY** to select a menu item.

- C Press **JOG KEY** to set your selection.

- D Press **MENU** twice to exit the menu.

VCR PLAY FUNCTION	
FUNCTION	OFF MIRROR STROBE
MOBAC	SLIM TRAIL
STRETCH	
DEFFECT	
BOFF	SEPIA MONO
DZOOM	OFF ON
SELECT	ROTATE JOG KEY
-SET	PUSH JOG KEY
-EXIT	PUSH MENU KEY

VCR PLAY FUNCTION	
FUNCTION	OFF MIRROR STROBE
MOBAC	SLIM TRAIL
STRETCH	
DEFFECT	
BOFF	SEPIA MONO
DZOOM	OFF ON
SELECT	ROTATE JOG KEY
-SET	PUSH JOG KEY
-EXIT	PUSH MENU KEY

CAMERA Main menu

- 1: **D. FUNCTION**
CAMERA FUNCTION menu is displayed. To select D.FUNCTION, D.ZOOM, or PROGRESSIVE.
- 2: **ADJUST**
CAMERA ADJUST menu is displayed. To select PROG. AE or CINEMA.
- 3: **REC MODE**
CAMERA REC-MODE menu is displayed. To select REC-SPEED, AUDIO-REC, INDEX, SHUTTER, SELF-REC, WIND-CUT, or ZOOM-MIC.
- 4: **SET-UP**
CAMERA SET-UP menu is displayed. To select REMOTE, BEEP, or MAGICVU (PV-DV402 only).
- 5: **DISPLAY SETTING**
DISPLAY SETTING menu is displayed. To select DISPLAY, C.RESET, DATE/TIME, or CLOCK-SET.
- 6: **LCD/EVF SETTING**
LCD/EVF SETTING menu is displayed. To select LCD BRIGHTNESS, LCD COLOR or EVF BRIGHTNESS.
- 7: **PHOTO TITLE**
PHOTO TITLE menu is displayed. To select TITLE or MODE.

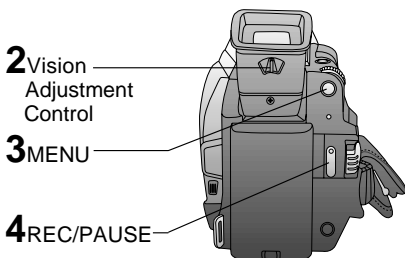
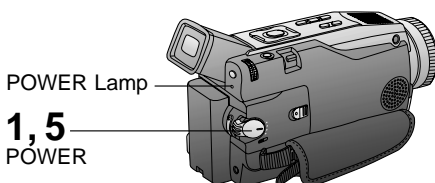
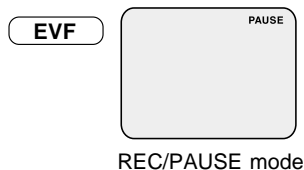
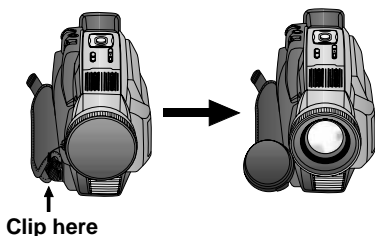
VCR Main menu

- 1: **PLAY FUNCTION**
VCR PLAY FUNCTION menu is displayed. To select D. FUNCTION, D.EFFECT, or D.ZOOM.
- 2: **REC MODE**
VCR REC MODE menu is displayed. To select REC-SPEED or AUDIO-DUB.
- 3: **PLAY MODE**
VCR PLAY MODE menu is displayed. To select INDEX, AUDIO, REMOTE, or B.SEARCH.
- 4: **MULTI SETTING**
MULTI SETTING menu is displayed. To select SPEED.
- 5: **DISPLAY SETTING**
DISPLAY SETTING menu is displayed. To select DISPLAY, C.RESET, DATE/TIME, or CLOCK-SET.
- 6: **LCD/EVF SETTING**
LCD/EVF SETTING menu is displayed. To select LCD BRIGHTNESS, LCD COLOR or EVF BRIGHTNESS.

Camera Recording

Simple Recording

Remove the lens cap and clip it to the hand strap.



WARNING:

- Do not leave the Palmcorder with the EVF aimed directly at the sun as this may cause damage to the internal parts of the EVF.
- Do not lift, or carry, the Palmcorder by the EVF or the LCD Monitor.

Before you begin

- Connect the Palmcorder to a power source. (pp. 14, 15)
- Insert a cassette with the record tab closed. (p. 7)

1

Set POWER to CAMERA.

- The POWER Lamp lights red.
- Be sure POWER is fully turned to the CAMERA position.

2

With the Viewfinder Eye Cup held up against your eye, adjust the Vision Adjustment Control to your eyesight.

- Adjust the EVF Brightness of the Viewfinder if necessary. Please refer to "To adjust the LCD/ EVF BRIGHTNESS or COLOR" on page 19.

3

Set to REC-SPEED "SP" or "LP" in the CAMERA Mode Menu. (Menu OSD: p. 108)

4

Press REC/PAUSE to start recording.

- "REC" is displayed on the screen. Press REC/PAUSE again to pause recording.

5

Set POWER to OFF when finished.

- To remove the cassette, slide TAPE EJECT.

- When the Palmcorder is aimed at excessively bright objects, or bright lights, a vertical bar may appear in the picture. This is a normal characteristic of the CCD pick-up device. Try to avoid this whenever possible.

To conserve power

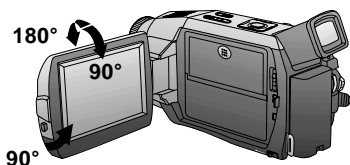
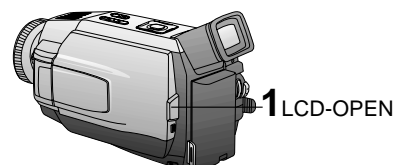
After 5 minutes, the Record/Pause mode will automatically change to Standby mode.

To resume recording, set POWER to OFF and then ON again.

Camera Recording

Using the LCD Monitor

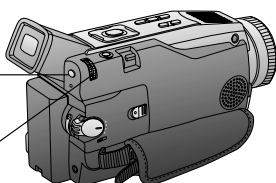
The LCD (Liquid Crystal Display) monitor can be used while recording.



To adjust the LCD/EVF BRIGHTNESS or COLOR

1, 5
MENU

2, 3, 4
JOG KEY



EVF/LCD



1 Press **LCD-OPEN** to unlock the LCD monitor.

2 Swing the LCD monitor fully open and adjust the viewing angle.

- The LCD monitor will automatically turn on.
- When the LCD monitor is completely closed, it will shut off automatically to save power.
- Adjust the LCD Brightness and/or color of the LCD monitor if necessary. Please refer to "To adjust the LCD/ EVF BRIGHTNESS or COLOR" below.

3 Start recording.

Note

- Using the LCD monitor will reduce battery operating time.
- Close the LCD monitor completely when not in use.

1 Press **MENU** to display the main menu screen.

2 Rotate **JOG KEY** to select **LCD/EVF SETTING** from the main menu screen. (Menu OSD: pp. 109, 111)

3 Press **JOG KEY** to display the LCD/ EVF SETTING screen.

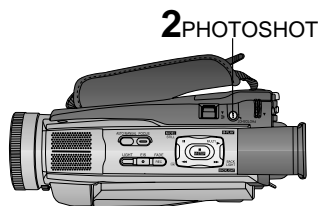
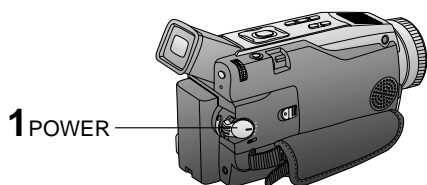
4 Press **JOG KEY** to select LCD BRIGHTNESS, LCD COLOR, or EVF BRIGHTNESS, then rotate **JOG KEY** to adjust.

5 Press **MENU** twice to exit this mode.

Camera Recording

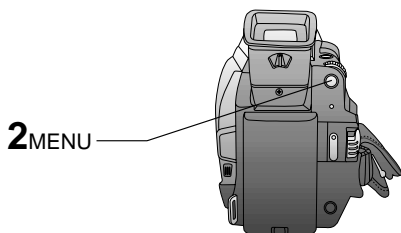
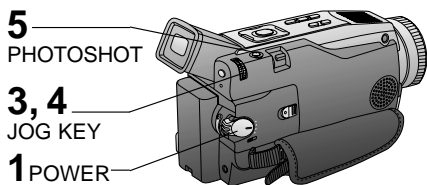
Digital PhotoShot™ Mode

Use this feature to record a seven second (approx.) still image from the current camera picture. Audio is also recorded for on-the-spot narration. Or, you can add narration later with the Audio Dubbing feature to make an interesting slide show, etc. (p. 44)



Progressive PhotoShot™ Mode

With the progressive PhotoShot Function, you can record still pictures with higher resolution than with the normal PhotoShot Function.



1 Set **POWER** to **CAMERA**.

2 Press **PHOTOSHOT** in Record/Pause mode. "PHOTO" will appear in the EVF or the LCD monitor.

EVF/LCD



Note

- If **SHUTTER** on the menu screen is set to **ON**, a sound effect similar to the shutter of a film camera will be heard when **PHOTOSHOT** is pressed.
- When **PHOTOSHOT** is pressed, the playback image takes approx. 7 seconds to process. After that, the Camera mode screen will be displayed.

1 Set **POWER** to **CAMERA**.

2 Press **MENU** to display the **CAMERA** mode menu screen.

3 Rotate **JOG KEY** to select **D.FUNCTION**, and press **JOG KEY** to display the **CAMERA FUNCTION** menu screen.

4 Rotate **JOG KEY** to select **PROGRESSIVE**, and press **JOG KEY** to select **ON** or **OFF**.

- Press **MENU** twice to exit.
- "P" will appear in the EVF or the LCD monitor.

5 Press **PHOTOSHOT** in Record/Pause mode.

EVF/LCD



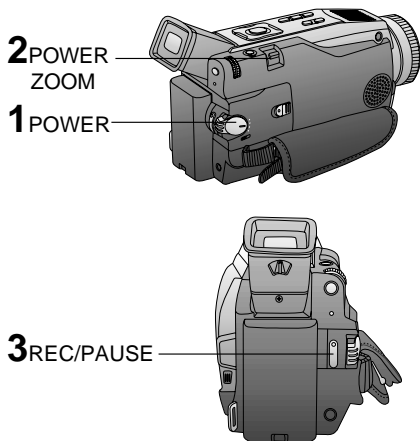
Note

- This Function may not work with some function settings.

Camera Recording

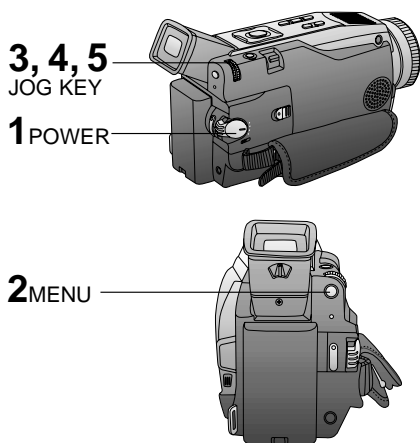
Zoom

You can gradually zoom in for close ups or zoom out for wide angle shots.



Zoom Microphone Function

Along with the zooming operation, the microphone's directional angle and sensitivity are varied for recording sounds.



1 Set **POWER** to **CAMERA**.

2 **Zoom slowly:**
by lightly pressing the "T" (Telephoto) or the "W" (Wide Angle) side of the **POWER ZOOM**.

Zoom quickly:
by applying more pressure.

3 Start recording.

Note

- The zooming speed ranges from a slow 17 seconds to a fast 1.5 seconds according to the amount of pressure applied to the **POWER ZOOM**.

1 Set **POWER** to **CAMERA**.

2 Press **MENU** to display the **CAMERA** mode menu screen.

3 Rotate **JOG KEY** to select **REC MODE**, then press **JOG KEY** to display the **CAMERA REC-MODE** menu screen.

4 Rotate **JOG KEY** to select **ZOOM-MIC** in the **CAMERA REC-MODE** menu. (Menu OSD: p. 108)

5 Press **JOG KEY** to select **ON**.
• Press **MENU** twice to exit.
• "Z.MIC" will appear on the screen.

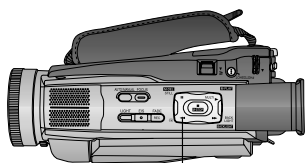
Note

- The Zoom Microphone Function may not work effectively if the surrounding noise is too loud.

Camera Recording

Recording Check

To playback the final few seconds of the last recorded scene in the REC/PAUSE mode.



1 RECORDING CHECK ◀◀

1 Press **RECORDING CHECK** ◀◀ briefly in the REC/PAUSE mode.

The [CHK] indication appears.

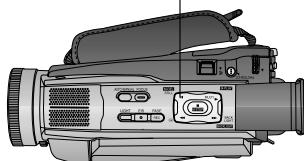
After checking, the Palmcorder returns to the REC/PAUSE mode.

- For Recording Check, the Palmcorder must be in the same mode (SP or LP) as was used for recording, otherwise the playback picture is distorted.

Recording Still Pictures

You can record still pictures of any desired duration together with sound.

1, 2 STILL

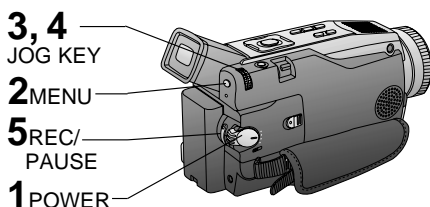


1 While in RECORD mode, **press STILL and hold for 2 seconds** to capture a still picture. The captured still picture will be recorded together with sound.

2 Press **STILL** once again to release the still picture. The camera will resume recording real-time pictures.

Self Recording

Rotate the LCD monitor 180 degrees so it faces the same direction as the lens to record yourself.



1 Set **POWER** to **CAMERA**.

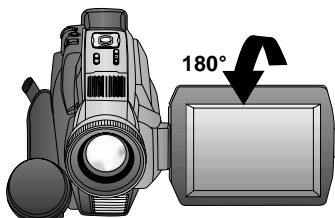
2 Press **MENU** to display the CAMERA mode menu screen.

3 Rotate **JOG KEY** to select **REC MODE**, then **press JOG KEY** to display the CAMERA REC-MODE menu screen.

4 Rotate **JOG KEY** to select **SELF-REC**, and then **press JOG KEY** to select **MIRROR**.

- The picture in the LCD monitor will appear reversed.

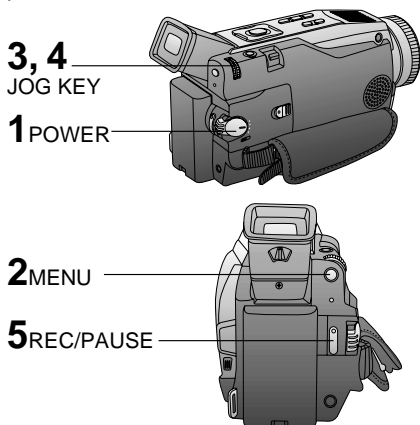
5 Start recording.



Special Effect Features

CINEMA Mode

You can record a picture compatible with a wide-screen TV equipped with an S2 picture terminal.



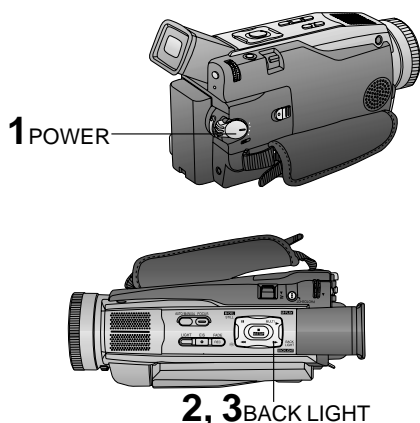
- 1** Set **POWER** to **CAMERA**.
- 2** Press **MENU** to display the **CAMERA** mode menu screen.
- 3** Rotate **JOG KEY** to select **ADJUST**, then press **JOG KEY** to display the **CAMERA ADJUST** menu screen.
- 4** Rotate **JOG KEY** to select **CINEMA**, and then press **JOG KEY** to select **ON**.
 - A black strip will appear at the top and bottom of the picture.
 - Press **MENU** twice to exit.
 - "CINEMA" will appear on the screen.
- 5** Start recording.

EVF/LCD



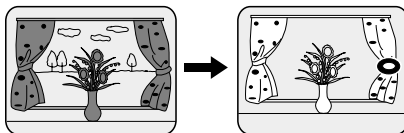
Backlight

Use when recording a subject that is darker than the surrounding scene, is in a shadowed area, or when the light source is in back of your subject.



- 1** Set **POWER** to **CAMERA**.
- 2** Press **BACK LIGHT** to activate the Backlight feature.
 - The Indicator "●" will appear in the EVF or LCD monitor.
- 3** Press **BACK LIGHT** again to cancel the Backlight feature.

EVF/LCD



Note

- The Indicator "●" will not appear in the EVF or LCD monitor when **OFF** is selected in the **DISPLAY** menu.

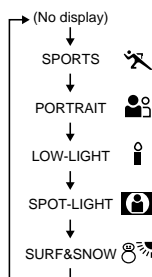
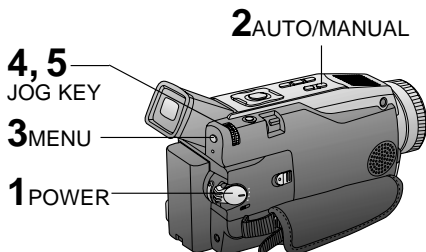
Special Effect Features

Program AE

The Auto Exposure feature can be used to make quality recordings in a variety of scene situations.

Note

- When MagicVu (PV-DV402 only) is ON, Program AE and H.S.S. cannot be set in the menu.



Note

SPORTS mode

- The recorded images will not be so blurred when they are viewed later using slow or still picture playback.
- When playing back a sports mode recording, the movement may appear slightly jerky.
- Do not use this mode when recording under fluorescent, mercury, or sodium lighting. These types of lights will affect the color and brightness of the images.
- A vertical band of light might appear when recording objects that are brightly illuminated or highly reflective.
- If the amount of light is insufficient, the SPORTS "X" indicator will flash in the EVF or the LCD monitor.
- The image may flicker if this mode is used indoors.

- 1 Set **POWER** to **CAMERA**.
- 2 Hold down **AUTO/MANUAL** for more than **0.7 seconds** so that the "MNL" indication appears in the EVF or the LCD monitor.
- 3 Press **MENU** to display the menu screen.
- 4 Rotate **JOG KEY** to select **ADJUST**, and then press **JOG KEY** to display the **CAMERA ADJUST** menu screen.
- 5 Rotate **JOG KEY** to select **PROG.AE**, then press **JOG KEY** repeatedly to select one of the five modes shown below.
- 6 Repeat steps 2-5 to select **OFF** to cancel this feature.

Mode	Indication
	For recording fast action scenes.
	For recording only subjects in the foreground, while ignoring subjects in the background.
	For recording in extreme low light conditions.
	Recording in situations where subjects are under a spotlight(s).
	For recording in locations with a high degree of "Dazzle," such as snow slopes and the seashore.

PORTRAIT mode

- The image may flicker if this mode is used indoors.

LOW-LIGHT mode

- Scenes recorded in extremely low light levels may not come out properly.

SPOT-LIGHT mode

- If the recorded subject is extremely bright, the picture may appear whitish.

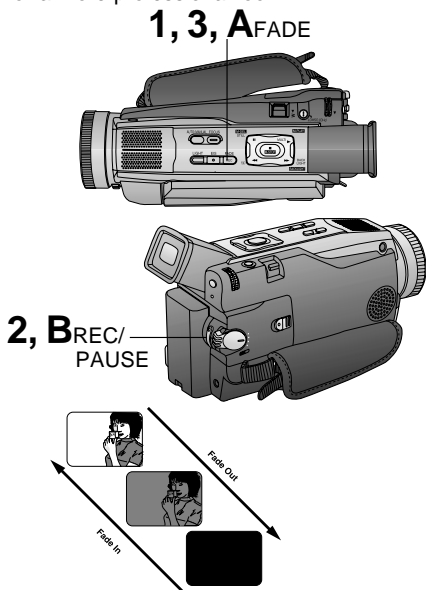
SURF&SNOW mode

- If the recorded subject is extremely bright, the picture may appear whitish.
- It is not possible to select the SPORTS mode or PORTRAIT mode together with the MagicPix mode in the Digital function camera menu.

Special Effect Features

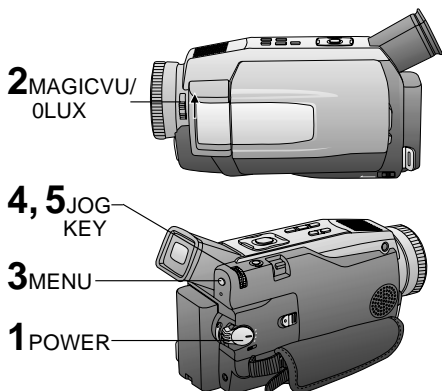
Audio/Video Fade In/Out

You can make smoother scene transitions for a more professional look.



MagicVu™ IR Filter (0 Lux) (PV-DV402 only)

MagicVu allows you to record video in total darkness. You can select the color of image: B/W, green, or blue. (Menu OSD: p. 109)



Fade In

Starting the first scene with "fade in" is very effective.

- 1** In REC/PAUSE mode, hold down **FADE** until the picture fades out.
- 2** Press **REC/PAUSE** to start recording.
- 3** Release **FADE** and the picture will gradually fade in.

Fade Out

Use to create a soft ending or (together with fade in) for a soft transition from one scene to the next.

- A** During recording, hold down **FADE** until the picture fades out.
- B** Press **REC/PAUSE** to pause the recording.

- 1** Set **POWER** to **CAMERA**.
- 2** Slide **MAGICVU/0LUX** to **ON**.
 - A black and white image appears.
 - "MAGICVU" will appear on the screen.
- 3** Press **MENU** to display the menu screen.
- 4** Rotate **JOG KEY** to select **SET-UP**, and then press **JOG KEY** to display the CAMERA SET-UP menu screen.
- 5** Rotate **JOG KEY** to select **MAGICVU**, and then press **JOG KEY** repeatedly to select B/W, BLUE, or GREEN.
 - Press **MENU** twice to exit.
 - To cancel this feature, slide **MAGICVU/0LUX** to **OFF**.

Note

- The subject can be up to 3 m (9 feet) away.

Special Effect Features

Picture in Picture (PinP)

You can display a PinP (still image) screen on the Main Picture.

Note

- PinP position is fixed at the bottom right of the screen.



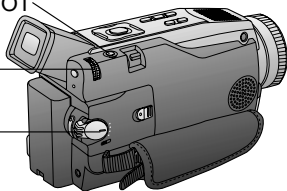
Main Picture

Picture in Picture (PinP still image)

PHOTOSHOT

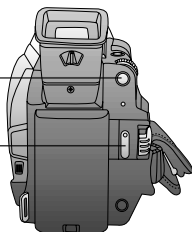
3, 4 JOG KEY

1 POWER

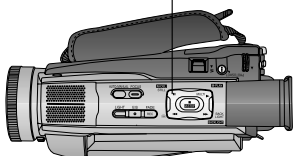


2 MENU

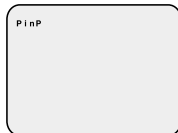
7 REC/PAUSE



5, 6, 7
CAMERA STILL



- 1 Set **POWER** to **CAMERA**.
- 2 Press **MENU** to display the menu screen.
- 3 Rotate **JOG KEY** repeatedly to select **D.FUNCTION**, then press **JOG KEY** to display the **CAMERA FUNCTION** menu screen.
- 4 Press **JOG KEY** to select **PinP**.
 - Press **MENU** twice to exit this menu.
 - "PinP" will appear in the EVF or the LCD monitor.
- 5 Aim at the scene you wish to place as PinP, then press **II (CAMERA STILL)** to freeze the image.
- 6 Press **II (CAMERA STILL)** again to place the frozen image as PinP.
- 7 Press **REC/PAUSE** to record a scene with PinP image.
 - Press **PHOTOSHOT** to record a scene with PinP image in PhotoShot mode.
 - Press **II (CAMERA STILL)** again to remove PinP image.



Special Effect Features

Photo Title

You can use PhotoShot images stored on a Memory Card to record a WIPE or MIX effect on a cassette.

Note

When Photo Title is set to ON, the selected image and Title will appear before each recording is made.

WIPE : The Photo title is replaced with the current scene in a wiping motion.



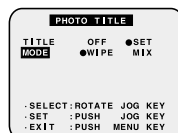
MIX : The photo title is replaced with the current scene in a gradual mixing effect.



Before you begin

- Connect the Palmcorder to a power source. (pp. 14, 15)
- Set POWER to OFF before inserting a recorded Memory Card. (pp. 48, 49)

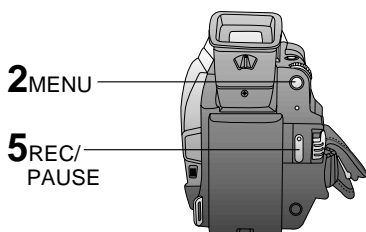
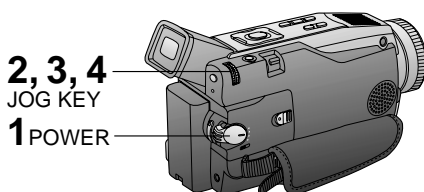
- 1 Set POWER to CAMERA.**
- 2 Press MENU** to display the CAMERA menu screen. Then **rotate and press JOG KEY** to select **PHOTO TITLE**.
- 3 Rotate and press JOG KEY** to select and set **MODE** and then **TITLE**.
1st : Select and set MODE (WIPE or MIX).
2nd : Select and set TITLE to "SET".



- "PLEASE WAIT" appears on-screen.
- The Multi image screen is displayed.

- 4 Rotate and press JOG KEY** to select and set an image.
• "PLEASE WAIT" is displayed while image is processed. Then, "PHOTO TITLE SET" is displayed for approx. 3 seconds, and the screen goes back to the Camera mode screen.
• After Photo Title is performed, Digital Function turns off.

- 5 Press REC/PAUSE** to start recording with Photo Title.
• WIPE or MIX screen is displayed at the beginning of the recording. Then the Photo Title setting will be cleared automatically.



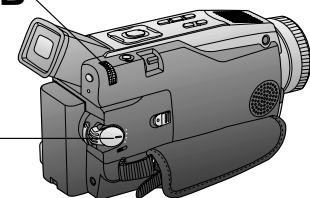
Advanced Settings

White Balance

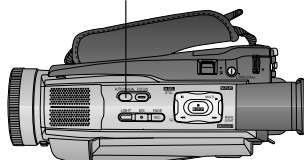
Auto White Balance ("AWB") automatically maintains optimum color balance in most lighting conditions. However, when using Digital Functions, etc., you may get better results by using the manual adjustment.

3, 4, A, B
JOG KEY

1 POWER



2 AUTO/MANUAL



Mode	Description
AWB	Automatically maintains optimum color balance in most lighting conditions.
☼	When the source illumination is a halogen lamp.
☼	When shooting outdoors on a sunny day.
* [AWB icon]	The White Balance setting that was previously set manually.

Note

- When ZOOM is set to 10X or higher, White Balance cannot be adjusted.

- 1** Set **POWER** to **CAMERA**.
- 2** Hold down **AUTO/MANUAL** for more than **0.7 seconds** so that the "MNL" indication appears in the EVF or the LCD monitor.
- 3** Press **JOG KEY** repeatedly until "AWB" appears in the EVF or LCD monitor.
- 4** Rotate **JOG KEY** to select other modes. (See mode chart at left.)
 - Hold down **AUTO/MANUAL** for more than 0.7 seconds to cancel the setting.

*** For manual White Balance adjustment:**

A. Rotate **JOG KEY** to select "[AWB icon]" .

B. Point the **Palmcorder** at a **white object (full-screen)** and hold **JOG KEY** down until "[AWB icon]" indication stops flashing.

- If "[AWB icon]" indication flashes when the **Palmcorder** is turned on, the previous manual White Balance setting is in effect.

In the following cases, the "[AWB icon]" indication flashes:

- The flashing indicates that the previously adjusted White Balance setting is still kept. This setting will be kept until White Balance is adjusted again.
- Correct White Balance may not be attainable manually in poor lighting.

Advanced Settings

Auto Focus

The Palmcorder automatically adjusts the focus over the entire zoom range.

Manual Focus

Use **Manual Focus (MF)** when recording ...

- a subject through glass.
- a subject not centered in the Viewfinder.
- a scene where the subject is far from the Palmcorder and there are objects in the foreground.
- a subject with distinct horizontal stripes.
- subjects with shiny surfaces.
- an obliquely angled subject.
- a bright, flat subject such as a white wall.
- in low light situations.
- a scene with fast motions, like a golf swing.

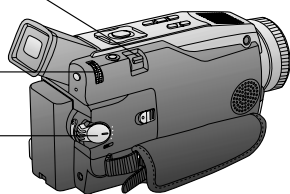
Re-focusing may be required

- when your Palmcorder is aimed at a new scene.

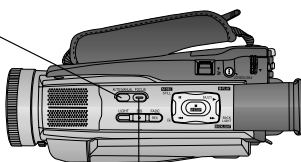
4, 6 POWER ZOOM

5 M.FOCUS DIAL

1 POWER



2 AUTO/MANUAL



3 FOCUS

- 1** Set **POWER** to **CAMERA**.
- 2** Hold down **AUTO/MANUAL** for more than **0.7 seconds** so that the "MNL" indication appears in the EVF or the LCD monitor.
- 3** Press **FOCUS** so that the "MF" (Manual Focus) indication appears in the EVF or the LCD monitor.
- 4** Press and hold **POWER ZOOM**, "**T**" side (**Telephoto**), until the lens is at maximum zoom in.
- 5** Turn **M.FOCUS DIAL** until the picture is in focus.
 - It may be necessary to back away from the subject to focus the image properly.
- 6** Press **POWER ZOOM** to "**W**" or "**T**" as desired.
 - The subject will remain in focus over the entire zooming range.
 - It may be necessary to back away from the subject to focus the image properly.

Note

- **DISPLAY** must be set to on for **MF**, **AE**, **W.BALANCE**, or **BACK LIGHT** to be displayed on the LCD or EVF.

Macro Focus (for close-ups)

Press the "**W**" side of **POWER ZOOM** to the maximum wide angle position.

Auto Focus will function with the subject as close as 25 mm (1 inch) in front of the lens.

Advanced Settings

High Speed Shutter

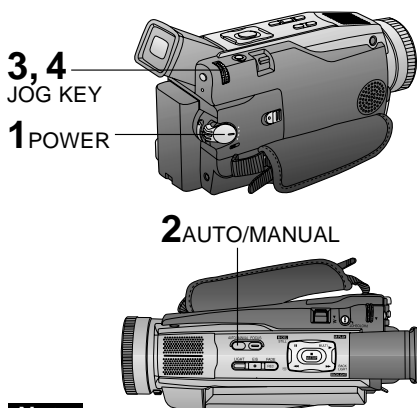
To record high speed motion (e.g. tennis stroke) with improved STILL or SLOW MOTION playback when watching the tape on this Palmcorder.

Auto Shutter

In the AUTO mode (no indication in the EVF and LCD monitor), the Palmcorder will automatically adjust the shutter speed (up to 1/350).

- AUTO mode is automatically selected whenever the POWER Switch is set to CAMERA.

Manual Selection

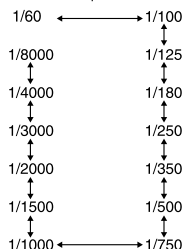
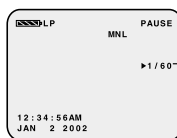


Note

- For proper color reproduction, it is recommended that you use this feature outdoors. For indoor High Speed Shutter recording, additional halogen or tungsten light should be provided. Fluorescent light will degrade the picture quality.
- This feature requires ample light. More light is required for the fastest shutter speeds.
- The Auto Focus system may not operate properly in insufficient light when using the High Speed Shutter.
- When PROG.AE is ON, you cannot manually select the shutter speed.
- When MagicVu (PV-DV402 only) is ON, Program AE and H.S.S. cannot manually select the shutter speed.
- When MagicPix is ON, H.S.S. cannot manually select the shutter speed.

- 1 Set POWER to CAMERA.
- 2 Hold down AUTO/MANUAL for more than 0.7 seconds so that the "MNL" indication appears in the EVF or the LCD monitor.
- 3 Press JOG KEY repeatedly to display the shutter speed.
- 4 Rotate JOG KEY to choose one of the following shutter speeds.
 - Hold down AUTO/MANUAL for more than 0.7 seconds to cancel the setting.

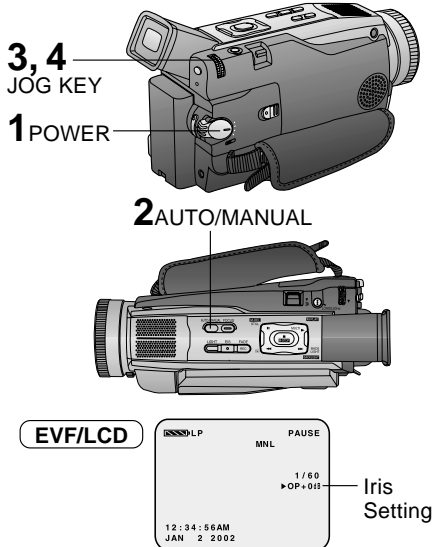
EVF/LCD



Advanced Settings

Adjusting the Iris Manually

Normally, the Palmcorder adjusts the exposure automatically. However, when the background is extremely bright, or when the subject is backlit, you can compensate by adjusting the Iris manually.



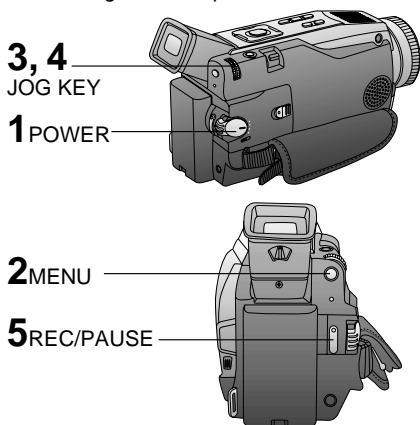
- 1 Set **POWER** to **CAMERA**.
- 2 Hold down **AUTO/MANUAL** for more than **0.7 seconds** so that the “MNL” indication appears in the EVF or the LCD monitor.
- 3 Press **JOG KEY** repeatedly so that Iris setting indication appears in the EVF or the LCD monitor.
- 4 Rotate **JOG KEY** to adjust the iris;
 - When a value closer to “CLOSE” is selected, the image becomes darker.
 - When a value closer to “OP+18dB” is selected, the image becomes brighter.
 - Hold down **AUTO/MANUAL** for more than 0.7 seconds to cancel the setting.

Note

- The value to which +dB is attached indicates a gain value. If this value is too large, the quality of the image deteriorates.
- Depending on ZOOM magnification, the iris value may not be displayed correctly.
- If you are using Program AE mode, you cannot adjust the iris. If the iris is adjusted manually, the above modes will be canceled.

WIND-CUT

You can reduce sound distortion caused by wind hitting the microphone.

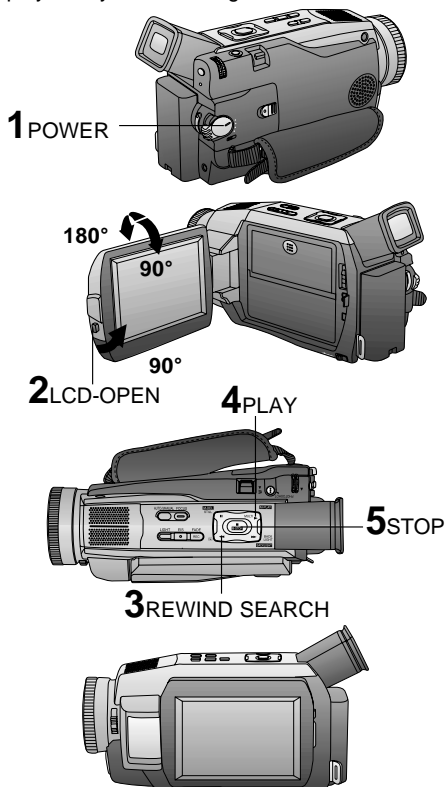


- 1 Set **POWER** to **CAMERA**.
- 2 Press **MENU** to display the CAMERA mode menu screen.
- 3 Rotate **JOG KEY** to select **REC MODE**, then press **JOG KEY** to display the CAMERA REC-MODE menu screen.
- 4 Rotate **JOG KEY** to select **WIND-CUT**, and then press **JOG KEY** to select ON.
 - Press **MENU** twice to exit.
 - “WIND-CUT” will appear in the EVF or LCD monitor.
- 5 Start recording.

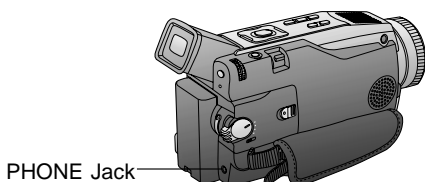
Playback Your Recordings

Playback using the LCD Monitor

You can also use the LCD monitor to playback your recording.



Connecting Earphone (not supplied)



Before you begin

- Connect the Palmcorder to a power source. (pp. 14, 15)
- Insert a recorded cassette.

- 1 Set the POWER to VCR.**
 - The POWER lamp lights red.
 - Be sure POWER is fully turned to the VCR position.
- 2 Press LCD-OPEN** to unlock the LCD monitor and swing open.
- 3 Press ◀ (REWIND/SEARCH)** to rewind the tape.
- 4 Press ▶ (PLAY)** to start playback.
- 5 Press ■ (STOP)** to stop playback.
 - When the tape reaches its beginning during rewind or rewind search, it will stop automatically.

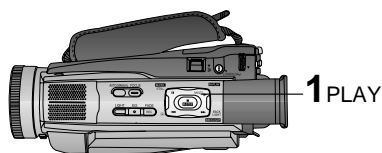
Note

- When a tape recorded in LP mode on another digital video camera is played back on this unit, the picture may appear mosaic.
- Using the LCD monitor reduces battery operating time.
- You can place the Palmcorder on a table, etc. for viewing. Rotate the LCD Monitor 180° and swing it up against the Palmcorder body as shown.

You can connect earphones (not supplied) to the PHONE Jack.

Playback Your Recordings

Repeat Playback



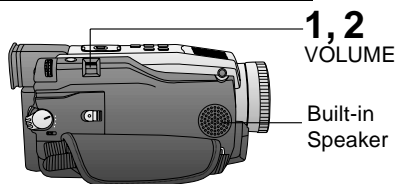
EVF/LCD



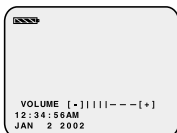
- 1 Press **PLAY** for more than 5 seconds in STOP mode.
 - The Palmcorder will go into Repeat Playback mode when the tape reaches its end.
 - The letter "R" will appear in the EVF and LCD monitor.

- 2 Turn the Palmcorder **OFF** to exit the Repeat Playback mode.

Adjusting the Volume



EVF/LCD



- 1 Rotate **VOLUME** to adjust the volume of the built-in speaker in PLAY mode.
 - The volume setting screen appears.
- 2 Press "**T**" to increase the volume or press "**W**" to decrease the volume.

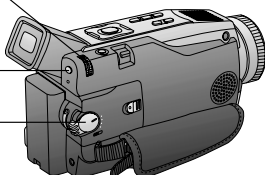
Blank Search

You can go directly to a blank portion of tape and start recording exactly where you left off.

3, 4, 5
JOG KEY

2 MENU

1 POWER



EVF/LCD



- 1 Set **POWER** to **VCR**.
- 2 Press **MENU** to display the VCR mode menu screen.
- 3 Rotate **JOG KEY** to select **PLAY MODE**, then press **JOG KEY** to display the VCR PLAY MODE menu screen.
- 4 Rotate **JOG KEY** to select **B.SEARCH** in the VCR PLAY MODE menu. (Menu OSD: p. 110)
- 5 Press **JOG KEY** to select ON.
 - "BLANK" will appear on the screen.

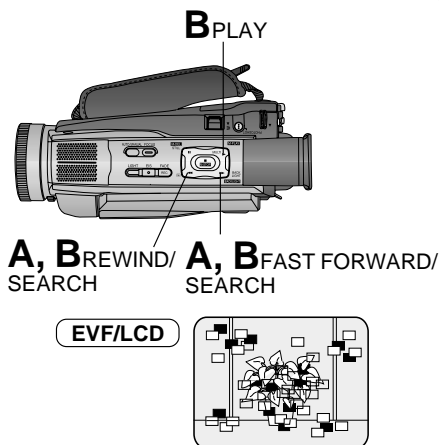
VCR

Special Effect Features

Note

- Sound is muted during all special effects.

Rapid Visual Search



A During playback, hold down ►► (FAST FORWARD/SEARCH) or ◄◄ (REWIND/SEARCH).

The search will continue for as long as the button is held down.

OR

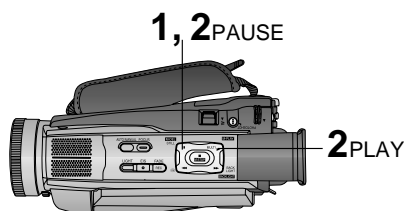
B Press ►► (FAST FORWARD/SEARCH) or ◄◄ (REWIND/SEARCH) once for a continuous rapid visual search.

Press ► (PLAY) to release.

Note

- When executing a rapid visual search, the picture may become bluish for an instant or mosaic. This is normal during this mode.

STILL Picture



1 Press II (PAUSE) during playback.

2 Press ► (PLAY) or II (PAUSE) to release.

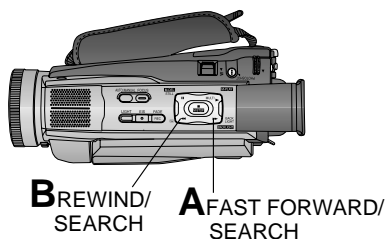
Note

- To protect the tape and video heads, your Palmcorder's operating modes will revert as follows:

STILL → STOP (after 3 minutes.)

Fast Forward/Rewind Check

Monitor normal picture playback during fast forward or rewind.



A Hold down ►► (FAST FORWARD/SEARCH) during fast forward.

B Hold down ◄◄ (REWIND/SEARCH) during rewind.

- The picture will appear for as long as the button is held down.

Special Effect Feature

Note

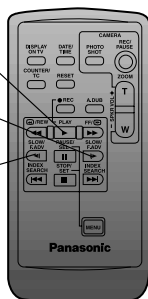
- Sound is muted during all special effects.

Slow Motion Playback (Remote Control Only)

2 **PLAY**

1 **▶ SLOW/ F.ADV**

1 **◀ SLOW/ F.ADV**



1

- Forward Slow:**
Press **▶ SLOW/F.ADV** during play.
Reverse Slow:
Press **◀ SLOW/F.ADV** during play.

2

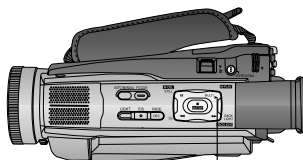
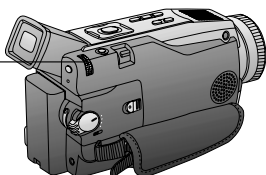
- Press **PLAY** to release. (During reverse slow motion playback, time code indication may not change regularly.)

Note

- Palmcorder will automatically STOP when in slow motion for more than 10 minutes.
- During slow motion playback, picture may move up and down. This is normal.
- When you start or stop slow motion playback, the picture may become bluish for an instant.

Variable Speed Search

2, 3
JOG KEY



1 **PLAY**

1

- Press **▶ (PLAY)** to start playback.

2

- Press **JOG KEY** for about 1 second.

3

- Rotate JOG KEY** to adjust the playback speed.
- Rotate **JOG KEY** clockwise for forward playback.
 - Rotate **JOG KEY** counterclockwise for reverse playback.

To return to normal playback:

Press **▶ (PLAY)**. Playback will continue at normal speed.

Note

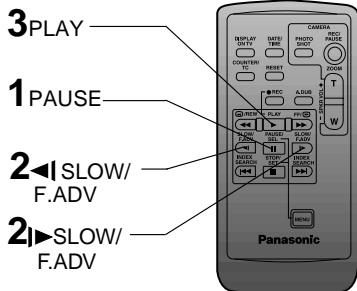
- The Variable Speed Search function offers a choice of six playback speeds (1/5X (LP mode: 1/3X), 1X, 2X, 5X, 10X, 20X) both in forward and reverse directions.
- The review playback at the 1X speed is playback in reverse direction.
- During the Variable Speed Search (at a speed other than 1X), mosaic-like patterns will appear in the picture.
- During the Variable Speed Search, sound is muted.

Special Effect Features

Note

- Sound is muted during all special effects.

Frame by Frame Advance (Remote Control Only)



- 1** Press **PAUSE** during playback.
- 2** Press **▶ SLOW/F.ADV** to do a frame by frame advance.

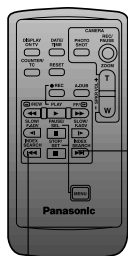
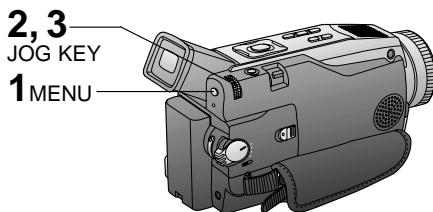
Press **◀ SLOW/F.ADV** to do a frame by frame reverse.

- 3** Press **PLAY** to release.

Note

- If you hold down SLOW/F.ADV, you can see a continuous series of still images at a slower speed than normal slow mode.
- During frame by frame advance, a few frames may move automatically, and the picture may become bluish for an instant.

Index Search (Photo/Scene) (Remote Control Only)



- 1** Press **MENU** to display the VCR mode menu screen.
- 2** Rotate **JOG KEY** to select **PLAY MODE**, and press **JOG KEY** to display the VCR PLAY MODE menu screen.
- 3** Rotate **JOG KEY** to select **INDEX**, and press **JOG KEY** to select PHOTO or SCENE.
 - Press MENU twice to exit.
- 4** Press **INDEX SEARCH fast forward or rewind** on the remote control to advance or rewind the tape to playback a PhotoShot scene. To view the next PhotoShot, INDEX SEARCH must be pressed again.

Note

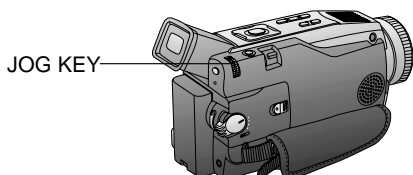
- The picture quality will deteriorate slightly.
- The tape remaining indicator will not appear while the PHOTOSHOT feature is used.
- In the Photo/Scene Index Search mode, the shutter sound effect may not be able to be heard even when SHUTTER is set to ON.
- Photo Index Search may fail to detect a recorded PhotoShot image if the image is 3 seconds or less.

Special Effect Features

Note

- Sound is muted during all special effects.

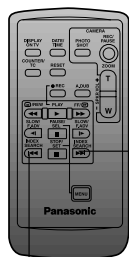
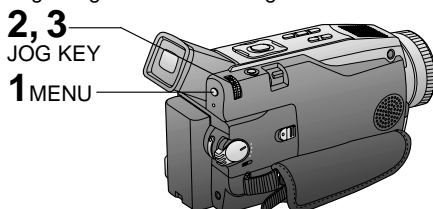
Jog Frame by Frame Search (Palmcorder Only)



During Still mode, **rotate JOG KEY** to advance or reverse the picture one frame at a time.

Index Forward/Reverse Search (Remote Control Only)

Search for a particular scene by using the electronic index marks placed at the beginning of each recording.



B INDEX SEARCH
(rewind)

Top Scan

If you hold down INDEX SEARCH more than 2 seconds, the Palmcorder will scan for scenes (or PhotoShots) and playback the first few seconds of each.

To cancel this function, press PLAY or STOP.

Note

- Search will not work if there is succession of PhotoShots.

- 1 Press MENU** to display the VCR mode menu screen.
- 2 Rotate JOG KEY** to select **PLAY MODE**, then **press JOG KEY** to display the VCR PLAY MODE menu screen.
- 3 Rotate JOG KEY** to select **INDEX**, and then **press JOG KEY** to select PHOTO or SCENE. (Menu OSD; p. 110)
 - Press MENU twice to exit.

A Place the Palmcorder in the VCR STOP mode.

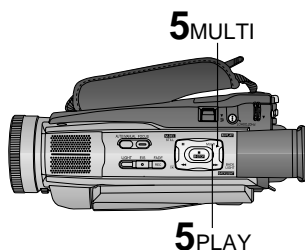
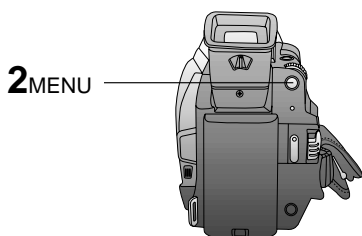
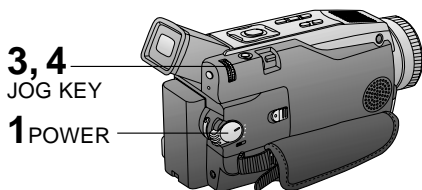
B Press INDEX SEARCH fast forward or rewind for the number of recordings (indexes) forward or back you want to view. The Palmcorder will advance or rewind to the desired recording and automatically start playback.

- The number of times you pressed the button is displayed in the EVF and the LCD monitor if you set INDEX on the VCR menu to SCENE. (Menu OSD; p. 110) (Ex., if you press the button three times, "S3" will appear.)
- If the interval between scenes is less than 1 minute, index search may not operate properly.
- Response time from pressing the button and the change in the scene number is quite slow. Do not press INDEX SEARCH rapidly and continuously.
- During Reverse Index Search mode, playback will not begin when a tape rewinds all the way to the beginning.

Special Effect Features

Strobe Multi Mode

In Strobe Multi Mode, you can select the rate at which a succession of still screens are captured from the playback picture.



Note

- A Multi Image Playback screen cannot be output from the DV terminal or Digital Still Image terminal.
- A Multi screen will have slightly lower image quality.

- 1 Set **POWER** to **VCR**.
- 2 Press **MENU** to display the menu screen.
- 3 Rotate and press **JOG KEY** to select and set **MULTI SETTING**.
- 4 Press **JOG KEY** repeatedly to set desired speed.

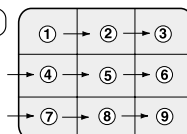
Strobe Speeds

Strobe Speeds	9 screen capture time
FAST	Every 0.3 seconds
NORM	Every 0.6 seconds
SLOW	Every 1.0 seconds

- Press **MENU** twice to exit.

- 5 Press **▶ (PLAY)** to start playback. Press **▶ (MULTI)** at the point you want to start capturing.
- A succession of 9 screens will be captured, and playback will stop.

EVF/LCD

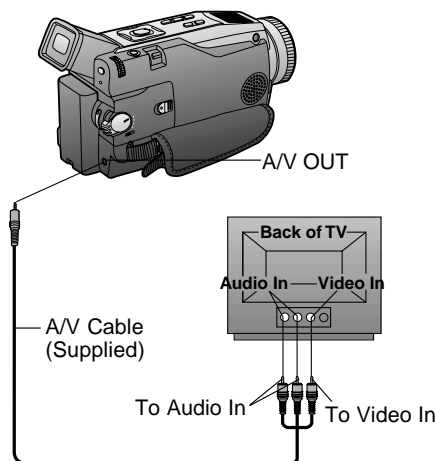


- Press **▶ (PLAY)** to start playback. Press **■ (STOP)** to stop playback.

Special Effect Features

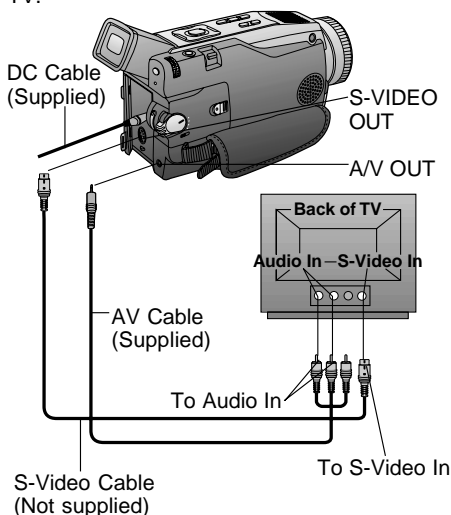
View Recording/Playback on your TV

[TV with AUDIO/VIDEO IN Jacks]



[TV with S-VIDEO IN Jacks]

For best Chrominance and Luminance, use the S-Video connection if available on your TV.



Before you begin

- When using S-VIDEO Connector, insert the DC Cable into the DC IN Terminal. (p. 15)

- 1 Set POWER to CAMERA or VCR.**
To view what the Palmcorder is recording or to playback a tape on your TV.
- 2 Turn your TV ON and set it to LINE INPUT or S-VIDEO.**
Check your TV operating instructions for further information.
- 3 Start playback or begin a recording.**

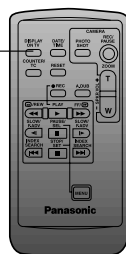
- Make sure the Palmcorder and TV are turned off while connecting.
- Please connect the A/V Cable securely.

Note

(Remote Control Only)

You can display the various EVF and LCD indications on your TV by pressing DISPLAY ON TV on remote control. Press again to remove the indications.

DISPLAY
ON TV



VCR

Digital Features

Digital Zoom

This feature is useful when you want to record close-up shots of subjects located beyond a normal zoom range of 1X to 10X magnification. With the digital zooming feature, you can select a magnification of 25X or even to 700X.

Note

- Other Digital Functions are turned off automatically when the EIS and Digital Zoom are selected.

EVF/LCD

Zoom In ("T")

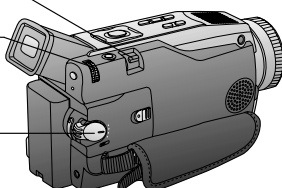


Zoom Out ("W")

5 POWER ZOOM

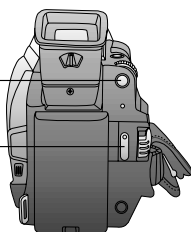
3, 4 JOG KEY

1 POWER



2 MENU

5 REC/PAUSE



CAMERA mode

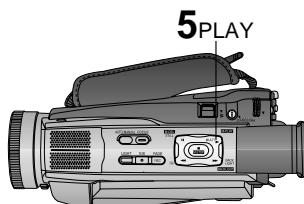
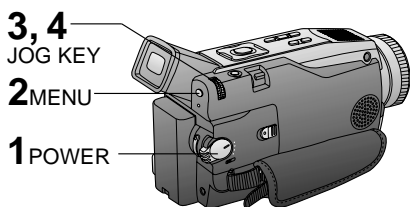
- 1 Set **POWER** to **CAMERA**.
- 2 Press **MENU** to display the **CAMERA MENU** screen.
- 3 Rotate **JOG KEY** to select **D.FUNCTION**, then press **JOG KEY** to display the **CAMERA FUNCTION** menu screen.
- 4 Rotate **JOG KEY** to select **D.ZOOM**, then press **JOG KEY** to select **D.ZOOM1** or **D.ZOOM2**.
 - D.ZOOM1 : from 10X to 25X
 - D.ZOOM2 : from 10X to 700X
 - OFF : Turn off D.ZOOM
- 5 Press **REC/PAUSE** to start recording and press **POWER ZOOM** to zoom in or zoom out.
 - The magnification level is always displayed in the EVF or the LCD monitor when **DISPLAY** is set to **ON**. (Menu OSD: pp. 109, 111)
- 6 Repeat steps 2~4 to select **OFF** to cancel this feature.

Note

- The normal optical zoom functions from 1X to 10X.
- As magnification increases, resolution significantly decreases.
- Because the image is enlarged digitally, the picture may become distorted when higher magnification levels are used.
- When the level falls below 10X, the normal zooming function will resume.
- Focus distance becomes 1.2 m (4 feet) if the lens is in full telephoto.

Digital Features

Digital Zoom (Continued)

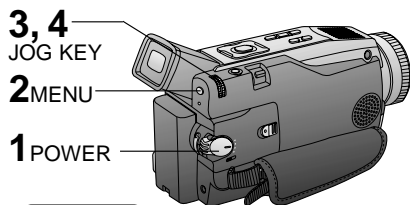


MagicPix™ Images

Color recording of video or still images onto the Mini DV tape in low lighting. (pp. 43, 108)

Note

- MagicPix cannot be used with still images on the Memory Card. (See "Card PhotoShot" on page 48.)



EVF/LCD



VCR mode

- 1 Set **POWER** to **VCR**.
- 2 Press **MENU** to display the VCR MENU screen.
- 3 Rotate **JOG KEY** to select **PLAY FUNCTION**, then press **JOG KEY** to display the VCR PLAY FUNCTION menu screen.
- 4 Rotate **JOG KEY** to select **D.ZOOM**, then press **JOG KEY** to select **ON**.
 - Press **MENU** twice to exit.
- 5 Press **▶ (PLAY)** to start playback.
 - The center portion of the image doubles in size.
- 6 Repeat steps 2~4 to select **OFF** to cancel this feature.

- 1 Set **POWER** to **CAMERA**.
- 2 Press **MENU** to display the menu screen.
- 3 Rotate **JOG KEY** to select **D.FUNCTION**, and then press **JOG KEY** to display the CAMERA FUNCTION menu screen.
- 4 Rotate **JOG KEY** to select **D.FUNCTION**, and then press **JOG KEY** repeatedly to select **MAGICPIX**.
 - Press **MENU** twice to exit.
- 5 To cancel the Digital Function, press **JOG KEY** repeatedly to select **OFF**.

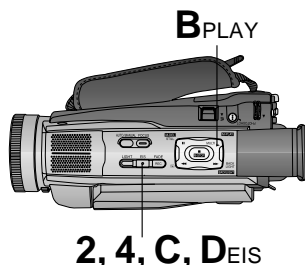
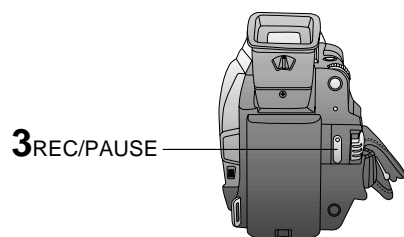
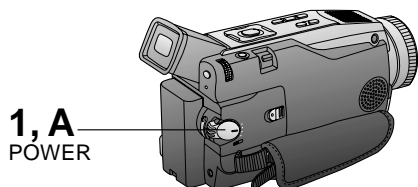
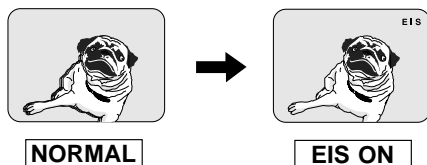
Digital Features

Dual Digital Electronic Image Stabilization System (D.E.I.S.)

This feature helps compensate for any unintentional hand or body movement. It can be used in both the Recording and Playback (VCR) modes.

Note

- Other Digital Functions are turned off automatically when the EIS and Digital Zoom are selected.



CAMERA mode

- Set **POWER** to **CAMERA**.
- Press **EIS** to stabilize the picture.
 - Picture flicker may be observed when taping under fluorescent lighting conditions.
 - The EIS indicator flashes when the light level is inadequate.
 - Turn D.E.I.S. OFF during recording when using a tripod.
- Press **REC/PAUSE** to start recording.
- Press **EIS** again to cancel.
 - Be sure that D.E.I.S. is turned off when not needed.

D.E.I.S. may not function when...

- Palmcorder movement is too extreme.
- Recording a subject with distinct horizontal or vertical stripes.
- Recording in low light situations.
- Recording a subject under a great amount of fluorescent light.
- Recording a scene with very fast motions.

VCR mode

- Set **POWER** to **VCR**.
- Press **▶ (PLAY)** to start playback.
- Press **EIS** to stabilize the picture.
- Press **EIS** again to cancel.
 - Be sure that D.E.I.S. is turned off when not needed.

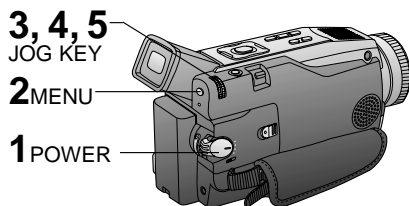
Note

- When using D.E.I.S. in VCR mode, the image size is slightly larger.

Digital Features

Other Digital Functions

Use the following features to add interest and professionalism to your recordings or playback. Select from twelve special effects.



Types of Digital Functions

MIRROR

Symmetrical image from the current camera picture.

STROBE

The recording appears as a sequence of still frames.

MOSAIC

The picture appears in a mosaic pattern.

SLIM

The picture is expanded vertically.

TRAIL

The subject being recorded creates a trail when in motion.

STRETCH

The picture is expanded horizontally.

MAGICPIX (Not available during playback)
Color recording of video or still images onto the Mini DV in low lighting. (p. 41)

- Only Manual Focus is available.

WIPE

Successive scenes are separated in a way which simulates the drawing of a curtain.

MIX

The current scene is mixed in with the following scene during scene changes.

PinP

PinP (Still image) is displayed on the Main Picture.

SEPIA

 (Only available during playback)

The picture is played back in sepia, a brownish color, giving it an antique look.

MONO (Monotone)

 (Only available during playback)

The picture is played back in black-and-white.

- 1 Set **POWER** to **CAMERA** or **VCR**.
- 2 Press **MENU** to display the menu screen.
- 3 Rotate **JOG KEY** to select **D.FUNCTION** in the **CAMERA** mode menu screen or **PLAY FUNCTION** in the **VCR** mode menu screen, then press **JOG KEY** to display the **CAMERA FUNCTION** or **VCR PLAY FUNCTION** menu screen.
- 4 Rotate **JOG KEY** to select **D.FUNCTION**, and then press **JOG KEY repeatedly** to select one of the Digital Functions listed on the left.
- 5 To cancel the Digital Function, press **JOG KEY repeatedly** to select **OFF**.

Note

- The **EIS** and **Digital Zoom** features are turned off automatically when one of the Digital Functions listed at left is selected.

To use the WIPE function

- a. In Camera mode, set the "D.FUNCTION" item in the main menu screen to "WIPE". (Menu OSD: p. 108)
- b. Press **REC/PAUSE** to start recording.
- c. Press **REC/PAUSE** to pause the recording. The last scene will be memorized.
- d. Press **RECORD/PAUSE** to start recording again. The new scene will take the place of the memorized scene.

To use the MIX function

- a. In Camera mode, set the "D.FUNCTION" item in the main menu screen to "MIX" (Menu OSD: p. 108). Then, perform steps **b-d** above.

The memorized scene and the new scene will appear mixed as the scene changes from one to the other.

Note

- When Photo Title is set, **WIPE/MIX** mode becomes Photo Title. When Photo Title is finished, Digital Function turns OFF.

Editing Features

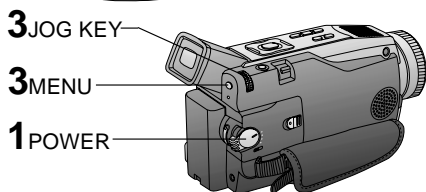
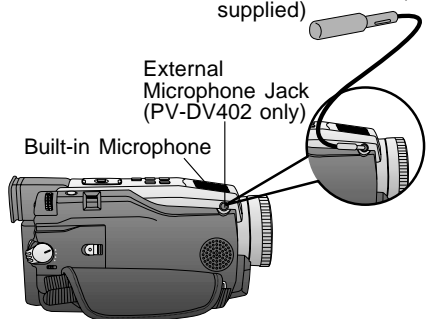
Audio Dubbing using the External (PV-DV402 only) or Built-in Microphone

The original sound can be replaced with new sound using the built-in Palmcorder microphone or an external microphone (PV-DV402 only).

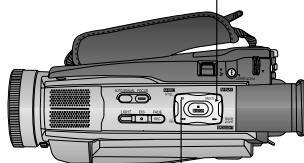
External Microphone with M3 connector (not supplied)

External Microphone Jack (PV-DV402 only)

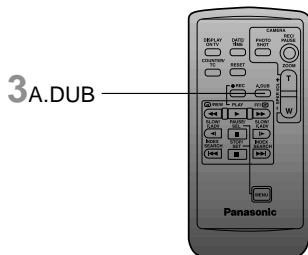
Built-in Microphone



2 PLAY



2 PAUSE



3 A.DUB

Before you begin

- Connect the external Microphone (if used) (PV-DV402 only).
- Turn on the Palmcorder.
- Insert a pre-recorded tape to be dubbed.

The AUDIO-REC setting in CAMERA MENU mode should be as follows:

12 bit	The original sound is recorded on ST (Stereo) 1, and the new sound will be recorded on ST (Stereo) 2.
16 bit	The original sound is replaced with the new sound.

- Select 12 bit if you do not want the original sound to be completely replaced during an audio dub.
- If you dub over a tape which has both 12 bit and 16 bit audio recordings on it, keep in mind that the original 16 bit audio portion will be completely replaced.

1

Set POWER to VCR.

- With the Remote Control, you can set the Palmcorder to stop automatically at a specified point on the tape. See "Memory-Stop Editing" on page 45.

2

Press ► (PLAY). Then press II (PAUSE) where you want dubbing to begin.

When using the Palmcorder only

3

Press MENU to display the VCR mode menu screen.

Rotate JOG KEY to select **REC MODE**, then press JOG KEY to display the VCR REC MODE menu screen.

Rotate JOG KEY to select **AUDIO-DUB**, and then press JOG KEY to select ON.

- The Palmcorder will go to Stand By mode, and "A.DUB" flashes in the EVF or the LCD monitor. Go to step 4.

When using the Remote Control only

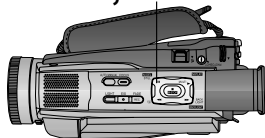
3

Press A.DUB on the Remote Control.

- The Palmcorder will go to Stand By mode, and "A.DUB" flashes in the EVF or the LCD monitor. Go to step 4.

Editing Features

4, 5 PAUSE



To listen to the desired audio sound, set the AUDIO setting of the VCR mode MENU (Menu OSD: p. 110) as follows:

AUDIO: The following selections are available for 12 bit AUDIO dubbed recordings only (sound recorded in SP mode only).

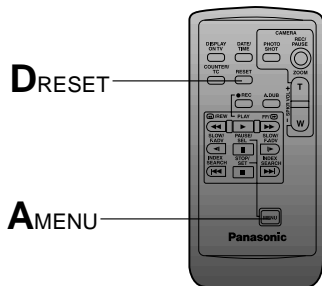
ST 1	Set this position to listen to the original sound.
ST 2	Set this position to listen to the audio dubbed sound.
MIX	Set this position to listen to both the original sound and the audio dubbed sound.

Note

- 16 bit dubbed sound completely erases the original 16 bit recorded sound.
- If you dubbed using 12 bit AUDIO recording and then selected AUDIO-MIX in the menu for playback, the sound will be stereo regardless of the AUDIO-OUT setting.
- If you recorded in LP mode, you cannot use the A.DUB feature.

Memory-Stop Editing (Remote Control Only)

You can set an automatic Dubbing stop point.



4 Press II (PAUSE) to start Audio Dubbing.

- Connect the Palmcorder to the TV in order to monitor the sound. (p. 39)



Only NTSC (National Television Standards Committee) recorded tapes can be audio dubbed. The following screen appears if the tape was not recorded in NTSC format.

5 Press II (PAUSE) to stop Audio Dubbing.

- If the microphone used for dubbing gets too near the speaker of your TV, a howling noise (feedback) may occur.
- If the tape position is in or was started in a blank section, you cannot use the A.DUB feature.

A Press MENU to display the VCR menu screen.

B Rotate JOG KEY to select **DISPLAY SETTING**, and then **press JOG KEY** to display the DISPLAY SETTING menu.

C Rotate JOG KEY to select **DISPLAY**, and then **press JOG KEY** to set to MEMORY.

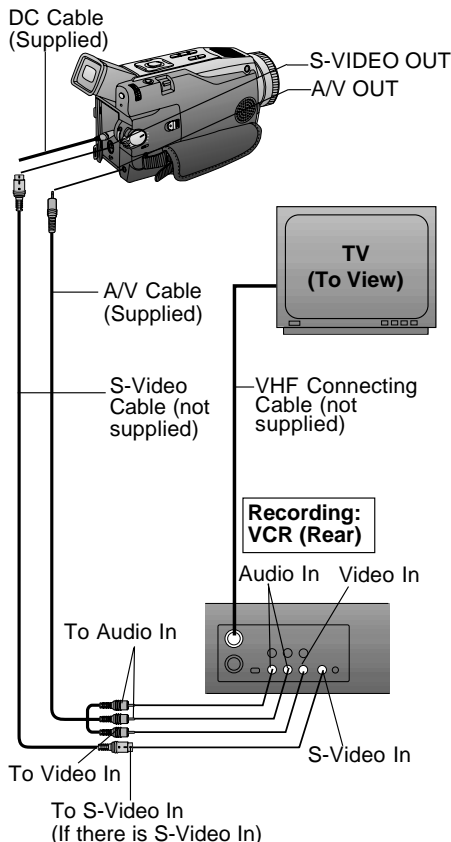
D Press MENU two times to exit MENU mode. Then, **press RESET on the remote control** to reset the Counter Memory to M 0:00:00.

Now, rewind to the editing start point, and continue with steps 2-5. The tape will now stop automatically at "M 0:00:00".

Editing Features

Copying your Tapes to S-VHS or VHS Cassette

Source (Playing) Palmcorder



Monitor with your TV

- Turn the TV ON and select its VCR channel (either CH3 or CH4).
- Set the VCR/TV Selector on the recording VCR to VCR.

Before you begin

- Connect both Palmcorder and VCR to their power sources.
- Connect the Palmcorder to a VCR as illustrated left.
- Turn ON both units.
- **Set the recording VCR's Input Signal Selector to LINE.**
- Set the Palmcorder POWER to VCR.
- Before using S-VIDEO Connector, insert the DC Cable into the DC IN Terminal. (p. 15)

- 1 Insert a pre-recorded tape** into the source (playing) Palmcorder and a blank tape, with record tab in place, into the target VCR (Recorder).
- 2 Press ► (PLAY)** on the Palmcorder. When the tape reaches the point you want to start dubbing, **press PAUSE**.
- 3 Place the VCR into REC/PAUSE mode.** (See VCR manual.)
- 4 Simultaneously, press PAUSE** on both units to begin copying.
- 5 Press STOP on both units** when copying is completed.

Note

- For technical reasons, dubbing a tape may reduce its quality.
- Press DISPLAY ON TV on the Palmcorder Remote Control to eliminate EVF/LCD Monitor indications.
- If the Time Code is displayed in the EVF or LCD monitor, it cannot be reset.
- Only the DATE/TIME, when displayed, will be recorded on the tape.

CAUTION:

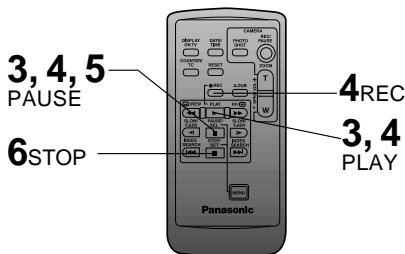
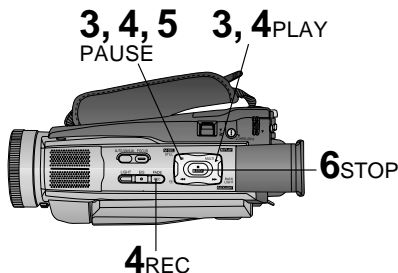
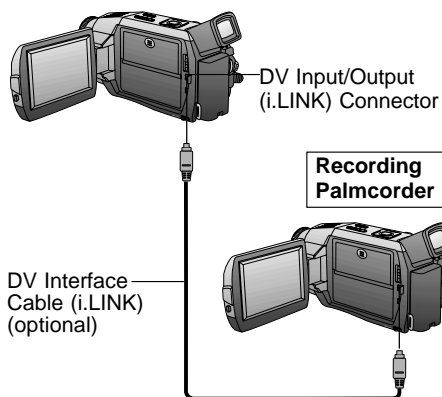
Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.

Editing Features

Copying from Digital Equipment (dubbing)

High quality digital-to-digital copying can be accomplished if both Palmcorders incorporate the DV Input/Output (i.LINK) Connector (DV interface cable (i.LINK) is not supplied).

Source (Playing) Palmcorder



Before you begin

- Connect both Palmcorders to their power sources.
- Connect the two Palmcorders using the DV interface cable (i.LINK) (4-pin to 4-pin).
- Turn both Palmcorders ON.

- 1 Insert a pre-recorded tape into the source (playing) Palmcorder, and set **POWER** to **VCR**.
- 2 Insert a blank tape with the record tab closed into the target (recording) Palmcorder and set **POWER** to **VCR**.
- 3 Press **▶ (PLAY)** on the source Palmcorder. When the tape reaches the point you want to start dubbing, press **II (PAUSE)**.
- 4 Hold down **REC** and press **▶ (PLAY)** on the target (recording) Palmcorder or on the remote control. Press **II (PAUSE)** to pause the tape at the starting point of the dub.
- 5 Simultaneously, press **II (PAUSE)** on both units to begin dubbing.
- 6 Press **■ (STOP)** on the recording unit, and then press **■ (STOP)** on the playing unit to end dubbing.

Note

- When two Palmcorders are used for dubbing, it is recommended that the Remote Control VCR1 or VCR2 setting be used to avoid improper operation.
- When two Palmcorders are connected using the DV interface cable (i.LINK) (not supplied), a Video Editing Controller cannot be used.
- Do not connect both an S-Video Cable or A/V Cable and a DV Interface Cable (i.LINK).

CAUTION:

Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.

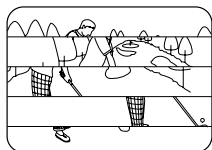
Specifications

Power Source:	Palmcorder: 7.2 V DC (Battery) 7.8 V DC (AC Adaptor) AC Adaptor: 110/120/220/240 V AC, 50/60 Hz Battery: Lithium-Ion Type DC 7.2 V
Power Consumption:	Palmcorder : 7.2 V/7.8 V DC 6.5 W (Max. 9.5 W) AC Adaptor : 18 W 1 W (when not in use.)
Digital Interface	USB/i.LINK (IEEE1394)
Video Signal:	EIA Standard (525 lines, 60 fields) NTSC color signal
Video Recording System:	2 rotary heads. helical scanning system
Audio:	12 bit (32 kHz) 4 tracks 16 bit (48 kHz) 2 tracks
Pick-Up System and Device:	One integral color filter Charge Coupled Device (CCD)
Lens:	10:1 zoom lens, F1:1.8 with auto iris control Focal length: 3.6 mm - 36 mm Power zoom function Lens filter diameter: 43 mm
Viewfinder:	5.3 mm (0.21 inch) Liquid Crystal Electronic Viewfinder
LCD Monitor:	63.5 mm (2.5 inch) Liquid Crystal Display (PV-DV202) 88.9 mm (3.5 inch) Liquid Crystal Display (PV-DV402)
Minimum Illumination Required:	5 lx (F1:1.8) 0.5 footcandles 0 lx (MAGICVU/0LUX ON) (PV-DV402 only)
Memory (Still image)	MultiMediaCard/SD Memory Card 640 x 480 pixels (NORMAL mode) 1,280 x 960 pixels (FINE mode)
Image Storage (supplied 8 MB Memory Card)	Approx. 70 images (NORMAL mode) Approx. 30 images (FINE mode)
Image Format	JPEG (Design Rule for Camera File System)
Operating Temperature:	32 °F~104 °F (0 °C~40 °C)
Operating Humidity:	10 %~75 %
Weight:	Palmcorder : (PV-DV202/402) 0.58 kg 1.28 lbs. AC Adaptor: 0.16 kg 0.35 lbs.
Dimensions:	Palmcorder : (PV-DV202/402) 88.5 (W) x 74 (H) x 185 (D) mm 3-1/2 (W) x 2-7/8 (H) x 7-5/16 (D) inch AC Adaptor: 70 (W) x 45 (H) x 115 (D) mm 2-3/4 (W) x 1-3/4 (H) x 4-1/2 (D) inch

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

Before Requesting Service

Cleaning Care for Video Heads



Clogged Video Head

(a) Video Head Cleaning: Normally, your Palmcorder will not require head cleaning. However, it is possible that the heads may become clogged due to dust in the air, playing damaged tapes, long term use, etc. If "NEED HEAD CLEANING" appears for 5 seconds in the EVF or LCD monitor, the heads may require cleaning.

(b) Cleaning the Heads: It is recommended that head cleaning be performed by a qualified service technician. Please contact your nearest Panasonic Servicenter. An alternate solution is to obtain a head cleaning cassette. Please use Panasonic cleaning cassette (AY-DVMCLA). Be sure to follow the cleaning instructions carefully. Excessive use of the head cleaning cassette could shorten video head life.

Use this cassette only when a head clogging symptoms occur.

Refer servicing to qualified service personnel.

Tape Operations Caution

- When you go from function to function (PLAY, FF, REW etc.), please note that the unit will not accept a new function operation until the previous operation is complete.
- The POWER Button and all function buttons, (PLAY, FF, REW, etc.) are only operational after the tape has been completely loaded.

Lens Hood Area Operation Caution

When the following accessories are attached and the zoom is set to maximum wide angle, the four corners of the screen may appear darker:

- Wide or Telephoto conversion lens (optional).
- A filter (optional), etc. and then the lens hood.
- Two filters (optional).

Self Diagnostic System

If any of the following numbers appear on-screen, the camcorder may need service. Do not remove the battery (if attached) and write down the displayed number on page 101. Then, take the camcorder to a servicenter for repair.

Error No.	Description
U11	Card Error
U12	Card Error
U13	Card Error
U14	Card/Camcorder Dialogue Error
U15	Card Access Error
U16	Card Access Error
U30	Error other than above

Before Requesting Service







If you have a problem with your Palmcorder, it may be something you can correct yourself.

Check the list below for symptoms and corrections.

Symptom	Correction
No picture in the EVF or LCD Monitor...	<ul style="list-style-type: none">• Make sure the Power Source is connected. (pp. 14, 15)• Make sure the POWER switch is set to VCR or CAMERA. (pp. 18, 32)• Check the Dew Indicator. (p. 99)• Make sure the Battery is fully charged. (p. 14)• Make sure all necessary cables are connected correctly and firmly. (p. 15)• Make sure the Lens Cap is removed. (p. 18)
Video cassette cannot be inserted...	<ul style="list-style-type: none">• Make sure the Power Source is connected. (pp. 14, 15)• Insert the cassette record tab up, window side facing out. (p. 11)
Video cassette cannot be removed...	<ul style="list-style-type: none">• Make sure the Power source is connected. (pp. 14, 15)
No operation starts when operation buttons are pressed...	<ul style="list-style-type: none">• Check the Dew Indicator. (p. 99)
Recording cannot be done...	<ul style="list-style-type: none">• Make sure the record tab is closed. (p. 7)• Check the Battery Indication. (p. 112)
Auto Focus does not operate...	<ul style="list-style-type: none">• Make sure FOCUS is set to AUTO. (p. 29)• Make sure the unit is ON and set to CAMERA mode. (p. 18)
Sound from microphone cannot be monitored...	<ul style="list-style-type: none">• Make sure the unit is set to REC or REC/PAUSE mode.
Sound cannot be heard...	<ul style="list-style-type: none">• Make sure the Audio on the VCR MENU is set to ST1. (pp. 44, 110)

On-Screen Displays (OSD)

The following warning displays appear in the EVF and the LCD monitor.

Indications	Condition
 TAPE NOT INSERTED	If the Palmcorder is in CAMERA mode without a cassette inserted, "□□" will flash and "TAPE NOT INSERTED" will appear for 5 seconds. Recording will not start.
 CHECK REC TAB	If the Palmcorder is in CAMERA mode or Audio dub mode with the cassette sliding record tab opened, "□□" will flash and "CHECK REC TAB" will appear for 5 seconds. Recording will not start.
 CANNOT REC	When Audio dub is performed and the recording in other than NTSC format, "□□" will flash and "CANNOT REC" will appear for 5 seconds.
 TAPE END	When the tape is about to end in REC mode, "□□ END" will flash and "TAPE END" will appear for 5 seconds.
INCOMPATIBLE TAPE	When an incompatible tape is detected, "INCOMPATIBLE TAPE" will appear for 5 seconds.
NEED HEAD CLEANING	If the video heads require cleaning, "NEED HEAD CLEANING" will appear for 5 seconds.
REMOTE	When the Palmcorder and remote are not set to the same mode (VCR1 or VCR2), "CHECK REMOTE MODE (REMOTE)" appears for 5 seconds. It also appears when the Palmcorder is first turned on.
CANNOT REC LP-MODE	When an AUDIO DUB is attempted on a pre-recorded LP tape, "CANNOT REC LP-MODE" will appear for 5 seconds.
 DEW DETECTED	If excessive moisture condenses in the unit, "WARNING" will flash, "DEW DETECTED" will appear, and the Palmcorder will automatically turn OFF in 15 seconds. In this case, wait until the indicator no longer flashes when your Palmcorder is turned ON again.
 LOW BATTERY	When a battery recharge is necessary, "WARNING" will flash, "LOW BATTERY" will appear, and the Palmcorder will automatically turn OFF in 15 seconds. (p. 112)
CLOCK BATTERY	When the built-in lithium clock battery is discharged, "CLOCK BATTERY" will appear. To re-charge the lithium clock battery, connect the AC Adaptor to the Palmcorder. Recharging takes approx. 4 hours. Reset the clock after charging.

On-Screen Displays (OSD)

Indications	Condition
INCOMPATIBLE DATA	If you play a tape recorded in a format other than NTSC or you try to copy copy-protected data, "INCOMPATIBLE DATA" will appear.
NO SPACE LEFT	When a still image is transferred from a tape to an already full Memory Card, or when setting is DPOF, "NO SPACE LEFT" appears.
DISCONNECT DV CABLE	If the Palmcorder is in M-CARD mode or Photo Title (CAMERA mode) and the DV Interface Cable (i.LINK) is connected, "DISCONNECT DV CABLE" appears. In this case, remove the DV Interface Cable (i.LINK) from the Palmcorder.
WRITE PROTECTED	In M-CARD mode, this display appears if the SD Memory Card Lock Switch is in the Lock position.

Request for Service Notice

Please photocopy this form when making a request for service notice.

Request for Service Notice:

In the unlikely event this product needs service.

- Please include your **proof of purchase**.
(Failure to do so will delay your repair.)
- To further speed your repair, please provide an explanation of what is wrong with the unit and any symptom it is exhibiting.

Mail this completed form and your Proof of Purchase along with your unit to:
Panasonic Services Company
1705 N. Randall Road
Elgin, IL. 60123-7847
Attn: Camcorder Repair

Please write the displayed Self Diagnostic number here. (p. 97)

Limited Warranty

Panasonic Consumer Electronics Company,
Division of Matsushita Electric Corporation
of America, One Panasonic Way
Secaucus, New Jersey 07094

Panasonic Sales Company,
Division of Matsushita Electric of Puerto Rico, Inc.
AVE. 65 de Infantería, Km. 9.5 San Gabriel
Industrial Park, Carolina, Puerto Rico 00985

PANASONIC/QUASAR Video Products Limited Warranty

Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the Warrantor") will repair or replace this product with new or refurbished parts or equivalent product, free of charge, in the USA or Puerto Rico, in the event of a defect in materials or workmanship as follows (all time periods commence from the date of the original purchase):

PRODUCT	PARTS	LABOR	SERVICE	CONTACTNUMBER
CAMCORDER	ONE (1) YEAR, EXCEPT CCD IMAGE SENSOR CCD IMAGE SENSOR - SIX (6) MONTHS	NINETY (90) DAYS NINETY (90) DAYS	Carry-In or Mail-In	1-800-211-PANA(7262)
DVD/VCR DECK	ONE (1) YEAR	NINETY (90) DAYS	Carry-In or Mail-In	1-800-211-PANA(7262)
DIGITAL STILL CAMERA	ONE (1) YEAR, EXCEPT CCD IMAGE SENSOR CCD IMAGE SENSOR - SIX (6) MONTHS	NINETY (90) DAYS NINETY (90) DAYS	Carry-In or Mail-In	1-800-272-7033
A/V MIXER	ONE (1) YEAR	NINETY (90) DAYS	Carry-In or Mail-In	1-800-211-PANA(7262)
TV/VCR, TV/DVD TV/DVD/VCR COMBINATION	ONE (1) YEAR, EXCEPT CRT CRT - TWO (2) YEARS	NINETY (90) DAYS CRT - NINETY (90) DAYS	Carry-In: 21" CRT and Smaller In-Home or Carry-In: 22" CRT and Larger	1-800-211-PANA(7262)
TV/HDR COMBINATION	ONE (1) YEAR, EXCEPT CRT CRT - TWO (2) YEARS	NINETY (90) DAYS CRT - NINETY (90) DAYS	In-Home or Carry-In	1-888-843-9788

Batteries (if included) - New rechargeable batteries in exchange for defective rechargeable batteries for ten (10) days. Non-rechargeable batteries are not warranted.

Tape (if included) - New video cassette tape in exchange for a defective video cassette tape for five (5) days.

Memory cards (if included) - Exchange defective item for new one for ninety (90) days.

In-home, carry-in or mail-in service, as applicable, in the USA can be obtained during the warranty period by contacting a Panasonic Services Company (PASC) Factory Servicenter listed in the Servicenter Directory. Or call toll free contact number listed above, to locate an authorized PASC Servicenter. Carry-in or mail-in service in Puerto Rico can be obtained during the warranty period by calling the Panasonic Sales Company telephone number listed in the Servicenter Directory.

This warranty is extended only to the original purchaser. A purchase receipt or other proof of the date of the original purchase is required before warranty service is rendered.

This warranty only covers failures due to defects in materials and workmanship, which occur during normal use and does not cover normal maintenance, including, but not limited to, video and audio head cleaning. The warranty does not cover damage which occurs in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a PASC Factory Servicenter or a PASC authorized Servicenter, or damage that is attributable to acts of God.

LIMITS AND EXCLUSIONS

There are no express warranties except as listed above.

THE WARRANTOR SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGE TO RECORDING MEDIA) RESULTING FROM THE USE OF THIS PRODUCTS, OR ARISING OUT OF ANY BREACH OF THE WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights, which vary, from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the Consumer Affairs Department at the Panasonic Consumer Electronics Company address above.

SERVICE CALLS WHICH DO NOT INVOLVE DEFECTIVE MATERIALS OR WORKMANSHIP AS DETERMINED BY THE WARRANTOR, IN ITS SOLE DISCRETION, ARE NOT COVERED. COSTS OF SUCH SERVICE CALLS ARE THE RESPONSIBILITY OF THE PURCHASER.

warvid 02/ 12/ 2001

Servicenter List

For Product Information, Operating Assistance, Literature Request, Dealer Locations, and all Customer Service inquiries please contact:
1-800-211-PANA (7262), Monday-Friday 9 am-9 pm; Saturday-Sunday 9 am-7 pm, EST.
or send e-mail to : consumerproducts@panasonic.com

Web Site: <http://www.panasonic.com>
You can purchase parts, accessories or locate your nearest servicenter by visiting our Web Site.

Accessory Purchases:

1-800-332-5368 (Customer Orders Only)
Panasonic Services Company 20421 84th Avenue South, Kent, WA 98032
(6 am to 5 pm Monday - Friday; 6 am to 10:30 am Saturday; PST)
(Visa, MasterCard, Discover Card, American Express, Check)

Factory Servicenters Locations

CALIFORNIA 6550 Katella Avenue Cypress, CA 90630 800 Dubuque Avenue S. San Francisco, CA 94080 3878 Ruffin Road Suite A San Diego, CA 92123 FLORIDA 3700 North 29th Avenue Suite 102 Hollywood, FL 33020	GEORGIA 8655 Roswell Road Suite 100 Atlanta, GA 30350 ILLINOIS 1709 North Randall Road Elgin, IL 60123 MASSACHUSETTS 60 Glacier Drive Suite G Westwood, MA 02090	MINNESOTA 7850-12th Avenue South Airport Business Center Bloomington, MN 55425 OHIO 2236 Waycross Road Civic Center Plaza Forest Park, OH 45240 PENNSYLVANIA 2221 Cabot Blvd. West Suite B Langhorne, PA 19047	TEXAS 13615 Welch Road Suite 101 Farmers Branch, TX 75244 WASHINGTON 20425-84th Avenue South Kent, WA 98032 HAWAII 99-859 Iwaiwa Street Aiea, Hawaii 96701 Phone (808) 488-1996 Fax (808) 486-4369
--	---	--	--

Service in Puerto Rico

Matsushita Electric of Puerto Rico, Inc. Panasonic Sales Company/ Factory Servicenter:
Ave. 65 de Infantería. Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985
Phone (787) 750-4300 Fax (787) 768-2910

As of Sep. 2001

Spanish Quick Use Guide/Guía Para Uso Rápido

Precauciones para su seguridad

ADVERTENCIA: PARA EVITAR INCENDIOS Y DESCARGAS ELÉCTRICAS, NO EXPONGA ESTE EQUIPO A LA LLUVIA NI A LA HUMEDAD.

Su ^{Mini} **DX** Palmcorder está diseñada para grabar y reproducir en el modo de Reproducción Estándar (SP) y modo Largo (LP).

Se recomienda el uso sólo de cintas de cassette que hayan sido probadas e inspeccionadas para su uso en aparatos VCR con la marca ^{Mini} **DX**.

	PRECAUCIÓN RIESGO DE DESCARGA ELÉCTRICA NO ABRIR	
PRECAUCIÓN: PARA REDUCIR EL RIESGO DE DESCARGA ELÉCTRICA, NO quite la cubierta (o parte posterior). EL APARATO NO TIENE EN SU INTERIOR PIEZAS QUE PUEDAN SER REPARADAS POR EL USUARIO. SOLICITE TODA REPARACIÓN A PERSONAL DE SERVICIO CUALIFICADO.		
	<p>Este símbolo tiene por finalidad alertar al usuario acerca de la presencia de tensión sin aislación en el interior del producto, que puede tener la intensidad suficiente como para causar descargas eléctricas. Por lo tanto, hacer contacto con cualquier pieza en el interior de la unidad es peligroso.</p>	
	<p>Este símbolo tiene por finalidad alertar al usuario de la presencia de importantes instrucciones de operación y mantenimiento en la literatura incluida con la unidad. Por lo tanto, lea detenidamente la literatura incluida para evitar problemas.</p>	

La etiqueta de régimen está pegada en la base de la cubierta del cargador.

Este dispositivo cumple con la parte 15 de las Reglas del FCC. El funcionamiento está sujeto a las dos siguientes condiciones: (1) Este dispositivo puede no causar interferencias perjudiciales, y (2) este dispositivo debe aceptar cualquier interferencia recibida, incluyendo interferencias que pueden causar un funcionamiento no deseado.

Nota: Este equipo ha sido puesto a prueba y se encontró que cumple con la Parte 15 de las reglas del FCC. Estos límites están diseñados para proveer una protección razonable contra interferencias cuando se opera en un ambiente residencial.

Si este equipo causa interferencias en la recepción de radio o televisión, lo cual se puede comprobar al apagar y encender el equipo, utilice el equipo en otra ubicación y/o utilice un tomacorriente diferente al que está utilizando el receptor. Si es necesario, consulte con el distribuidor o un técnico experto de radio/TV para solicitar ayuda. Puede encontrar útil el folleto 'Información sobre las interferencias' disponible en las oficinas regionales del FCC local.

Advertencia del FCC:

Para asegurar la conformidad continua del FCC, utilice solamente el cable de interfaz blindado cuando conecte una cámara de video digital a una computadora de acuerdo con las instrucciones incluidas aquí. También, cualquier cambio sin autorización o modificaciones a este equipo anularían la autoridad del usuario para operarlo.

Spanish Quick Use Guide/Guía Para Uso Rápido

Inserte de la batería

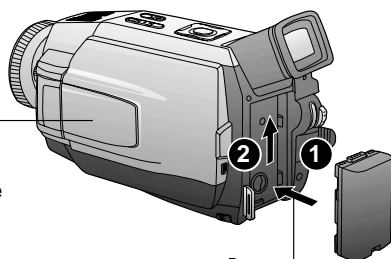
Antes de comenzar

- Cargue la batería. (Página 14.)

Film de protección

Nota

- Retire la película protectora antes de utilizarlo.



1

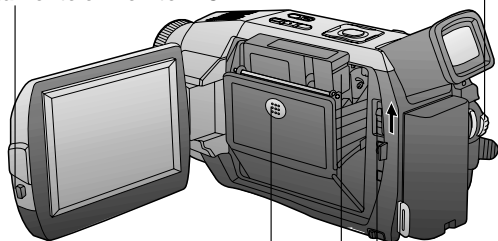
Coloque la batería y deslícela hacia arriba hasta que se quede bloqueada con un clic.

Insert Cassette

Esta videocámara contiene un sistema de ejecución fácil del cassette. Por eso, es fácil de introducir o sacar el cassette aunque esté montado sobre un trípode. (Página 7.)

1

Presione LCD-OPEN y abra completamente el monitor LCD.



2

Ajuste el interruptor de alimentación (POWER) a la posición VCR o CAMERA.

3

Deslice el interruptor de expulsión de cinta (TAPE EJECT) para abrir la tapa del compartimento del cassette.

5

Presione la marca PUSH TO CLOSE (EMPUJAR PARA CERRAR) para cerrar la tapa del compartimento del cassette.

4

Introduzca un cassette con la parte de la ventana hacia arriba.

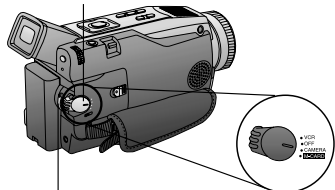
- Asegúrese de que la lengüeta de grabación esté cerrada. (Página 7.)

Spanish Quick Use Guide/Guía Para Uso Rápido

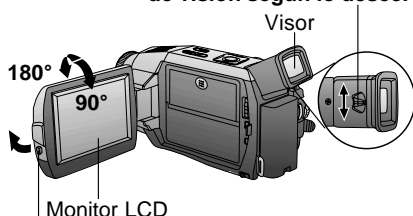
Grabación con la cámara

Cuando el monitor LCD se encuentra totalmente abierto, el visor se DESACTIVA automáticamente.

- 1** Ajuste el interruptor de alimentación (POWER) a la posición CAMERA.



- 2** Ajuste el control de ajuste de visión según lo desee.



- 4** Presione el botón de grabación/pausa (REC/PAUSE) para iniciar la grabación.
Vuelva a pulsar el botón de grabación/pausa (REC/PAUSE) para hacer una pausa en la grabación.

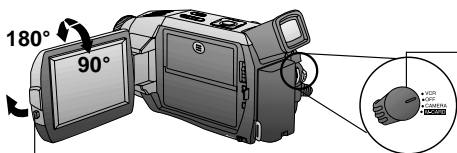
- 3** Presione el botón de apertura del LCD (LCD-OPEN) para desbloquear el monitor LCD. Balancee abriéndolo completamente y ajuste el ángulo.

Para ver la reproducción en el LCD (pantalla de visualización de cristal líquido)

Cuando el monitor LCD se encuentra totalmente abierto, el visor se DESACTIVA automáticamente.

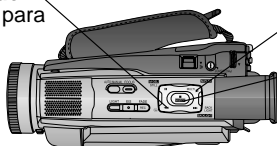
Antes de comenzar

- Cargue la batería. (Página 14.)



- 2** Presione el botón de apertura del LCD (LCD-OPEN) para desbloquear el monitor LCD. Balancee abriéndolo completamente y ajuste el ángulo.

- 3** Presione el botón de rebobinado (REW) para rebobinar la cinta.



- 4** Presione el botón de reproducción (PLAY) para reproducir la cinta.

- 5** Presione el botón de parada (STOP) para detener la reproducción.

Spanish Quick Use Guide/Guía Para Uso Rápido

Introducir la Tarjeta de memoria*

Antes de comenzar

- Cargue la batería. (Página 14.)

*Tarjeta de Memoria: Tarjeta MultiMedia o Tarjeta de Memoria SD (Página 94.)

- Asegúrese de introducir la Tarjeta de memoria antes de utilizar la tarjeta PhotoShot. (Página 48.)

A continuación se indican una lista de Tarjetas de Memoria soportadas por esta unidad.

Memory Card	Capacity
Tarjeta de memoria SD (RP-SD008BMKO)	8 MB
Tarjeta MultiMedia (Marca de fábrica SanDisk)	8 MB, 16 MB
Tarjeta de Memoria SD (opcional) (Página 92.)	16 MB, 32 MB, 64 MB

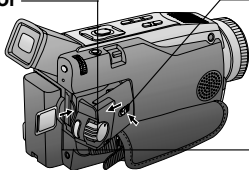
Botón para la protección de copia de la tarjeta de memoria SD



La tarjeta de memoria SD tiene un botón para la protección de copia. Deslice el botón hacia la dirección de LOCK para prevenir una copia o cambio de la estructura de la tarjeta.

Botón para la protección de copia

- 1** Ajuste el interruptor de alimentación (POWER) a la posición OFF.
- 2** Deslice el botón CARD EJECT para abrir la tapa del compartimiento de la tarjeta de memoria.
- 3** Introduzca la tarjeta de memoria hasta que se coloque en su sitio con un clic.
- 4** Cierre la puerta de M-CARD.

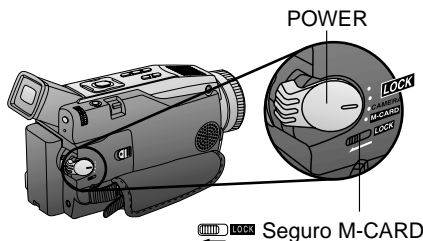


Para quitar la tarjeta de memoria...

Presione aquí para quitar la tarjeta.



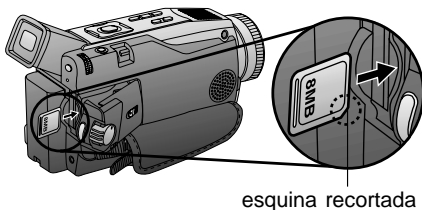
Acerca del seguro M-CARD



Nota

- Deslizando el seguro M-CARD a la posición LOCK, evitara que POWER gire por error a la posición M-CARD al cambiar POWER a CAMERA.

Al insertar la tarjeta de memoria

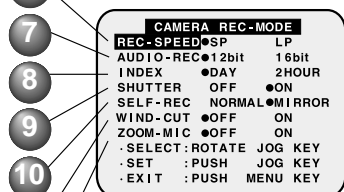
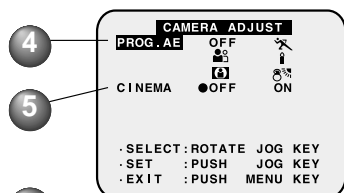
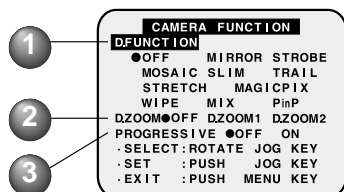


Nota

- Al insertar la tarjeta de memoria, insertela con la esquina recortada hacia abajo tal como se indica en la figura anterior.

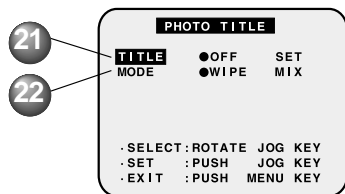
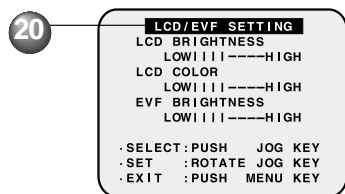
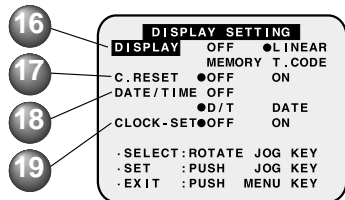
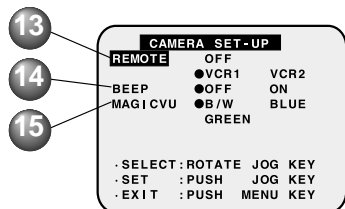
MENU OSD

Camera Mode Menu Screen



- 1 **D.FUNCTION** (pp. 41, 43)
To select one of the 10 digital functions.
Setting to OFF cancels the previously selected digital function.
- 2 **D.ZOOM** (p. 40)
To select D.ZOOM1 (from 10X to 25X) or D.ZOOM2 (from 10X to 700X).
Setting to OFF cancels the previously selected digital zoom.
- 3 **PROGRESSIVE** (p. 20)
When set to ON, still pictures taken with PhotoShot are recorded with a higher resolution than with normal PhotoShot.

- 4 **PROG. AE** (p. 24)
To select one of the 5 Program AE modes. Setting to OFF cancels the previously selected Program AE mode.
- 5 **CINEMA** (p. 23)
When set to ON, you can record a picture compatible with a wide-screen TV equipped with an S2 picture terminal.
- 6 **REC-SPEED** (pp. 7, 18)
SP: Normal recording speed mode.
LP: Recording time is 1.5 times as long as in the SP mode. For example, 120 minutes of recording is possible on a 80 minute tape.
- 7 **AUDIO-REC** (p. 44)
12 bit: The sound is recorded in the 12 bit/32 kHz mode.
16 bit: The sound is recorded in the 16 bit/48 kHz high-quality mode.
- 8 **INDEX**
DAY: An index signal is recorded when recording is restarted after the date has changed since the last recording.
2 HOUR: An index signal is recorded when recording is restarted after a lapse of more than 2 hours.
- 9 **SHUTTER** (pp. 20, 48)
When set to ON, still pictures taken in the PhotoShot mode are recorded with a visual shutter effect and click sound.
- 10 **SELF-REC** (p. 22)
NORMAL: During self-recording, the picture on the LCD Monitor is the same as it will be recorded.
MIRROR: During self-recording, the picture on the LCD Monitor is horizontally reversed.
- 11 **WIND-CUT** (p. 31)
To reduce sound distortion caused by wind hitting the microphone.
- 12 **ZOOM-MIC** (p. 21)
When set to ON, the microphone's directional angle and sensitivity vary according to the zoom operation.



13 REMOTE (p. 10)

VCR1: To receive signals from the Remote Control, set to VCR1.

VCR2: To receive signals from the Remote Control, set to VCR2.

OFF: To prevent reception of signals from the Remote Control.

14 BEEP

Set to ON to hear beep when starting and stopping camera recording or when unusual conditions occur. To cancel the beep, set to OFF.

Palmcorder will beep:
Once when you start recording
Twice when you stop recording
Repeatedly when warning of unusual conditions.
(pp. 99, 100)

15 MAGICVU (PV-DV402 only) (p. 25)

To select one of the 3 MagicVu modes slide MAGICVU/OLUX Switch to ON.

16 DISPLAY (p. 113)

To select the desired type of display and counter indication displayed on the LCD Monitor or in the viewfinder.

17 C.RESET (p. 113)

Setting to ON resets the counter to zero.

18 DATE/TIME (p. 112)

The date and time can be set and displayed on the screen.

19 CLOCK-SET (p. 16)

When set to ON, the date and time can be set on the screen.

20 LCD/EVF SETTING (p. 19)

Setting to ON displays the menu for adjusting the LCD brightness, color level, and the EVF brightness.

21 TITLE (p. 27)

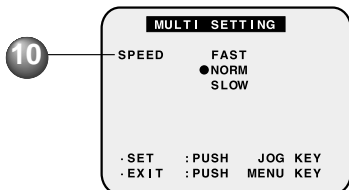
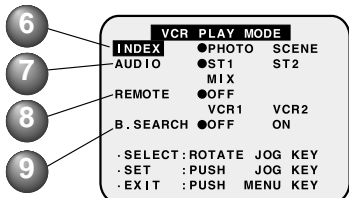
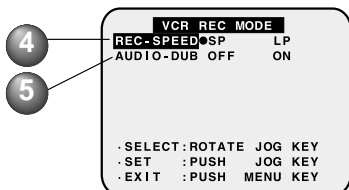
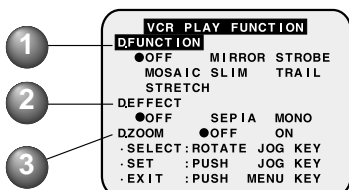
Photo Title is recorded.

22 MODE (p. 27)

To select one of the 2 Photo Title modes.

MENU OSD

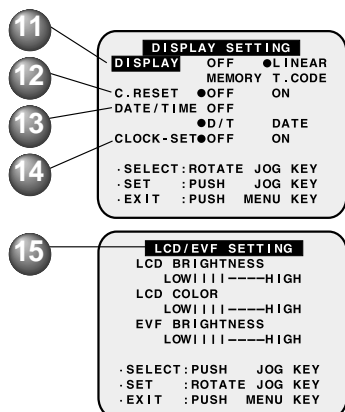
VCR Mode Menu Screen



- 1 **D.FUNCTION** (p. 43)
To select one of the 6 digital functions.
Setting to OFF cancels the previously selected digital function.
- 2 **D.EFFECT** (p. 43)
To select one of the 2 digital picture effects for playback. Setting to OFF cancels the previously selected digital effect.
- 3 **D.ZOOM** (p. 41)
Set to ON to double the size of a playback image. Setting to OFF cancels the previously selected digital zoom.

- 4 **REC-SPEED** (p. 7)
SP: Normal recording speed mode.
LP: Recording time is 1.5 times as long as in the SP mode. For example, 120 minutes of recording is possible on an 80 minute tape.
- 5 **AUDIO-DUB** (p. 44)
Set to AUDIO-DUB "ON" in the Menu OSD to use the Audio Dub feature.
- 6 **INDEX** (pp. 36, 37)
To select the desired Index Search function.
PHOTO: To search for Photo shot pictures.
SCENE: To search for scenes marked with Index signal.
- 7 **AUDIO** (p. 45)
To select the desired audio playback mode after performing audio dubbing in the 12 bit mode (SP mode only).
ST1: The original sound alone is played back.
ST2: The dubbed sound alone is played back.
MIX: The original sound and the dubbed sound are played back together.
- 8 **REMOTE** (p. 10)
VCR1: To receive signals from the Remote Control, set to VCR1.
VCR2: To receive signals from the Remote Control, set to VCR2.
OFF: To prevent reception of signals from the Remote Control.

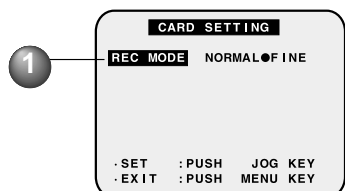
- 9 **B.SEARCH (Blank Search)** (p. 33)
Select ON to go directly to a blank portion of the tape.
- 10 **SPEED** (p. 38)
In Strobe Multi mode, used to select the interval at which a succession of still screens are captured from the playback picture.
FAST: Every 0.3 seconds
NORM: Every 0.6 seconds
SLOW: Every 1.0 seconds



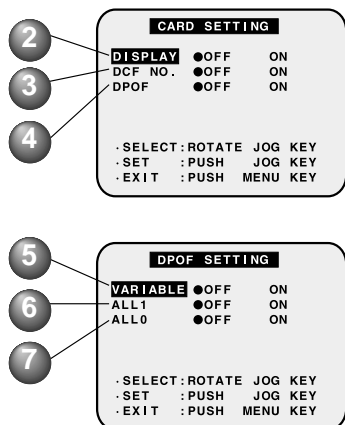
- 11 DISPLAY** (p. 113)
To select the desired type of display and counter indication displayed on the LCD Monitor or in the viewfinder.
- 12 C.RESET** (p. 113)
Setting to ON resets the counter to zero.
- 13 DATE/TIME** (p. 112)
The date and time can be set and displayed on the screen.
- 14 CLOCK-SET** (p. 16)
When set to ON, the date and time can be set on the screen.
- 15 LCD/EVF SETTING** (p. 19)
Setting to ON displays the menu for adjusting the LCD brightness, color level, and the EVF brightness.

M-CARD Mode Menu Screen

[Photo Rec Mode Menu Screen]



[Photo Play Mode Menu Screen]

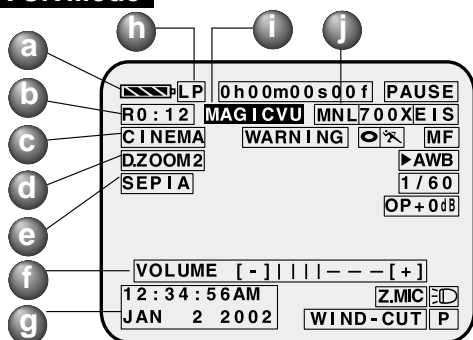


- 1 REC MODE** (p. 48)
To select Photo Rec Mode.
- 2 DISPLAY** (p. 115)
Select to OFF to cancel all Displays on the screen.
- 3 DCF NO.** (pp. 50, 115)
Select to OFF to cancel DCF (Design rule for Camera File system) No. on the screen.
- 4 DPOF** (pp. 54, 115)
When set to ON, information of the image to be printed and the number of prints desired (DPOF data) is written to the Memory Card.
- 5 VARIABLE** (p. 54)
When set to ON, you can select images recorded on the Memory Card and set the number of prints desired.
- 6 ALL1** (p. 54)
When set to ON, the number of prints recorded on the Memory Card is collectively set to 1.
- 7 ALL0** (p. 54)
When set to ON, the currently set number of prints is set to 0.

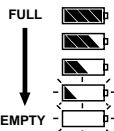
Electronic Viewfinder/LCD Monitor Indications

Here are some of the basic indications which will appear on the Palmcorder EVF and LCD Monitor. Only Date and Time indications will be recorded onto the tape.

CAMERA/VCR Mode

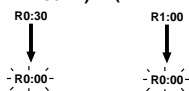


a Battery Remaining



b Tape Remaining

(AY-DVM30EA) (AY-DVM60EA)



- It will take several seconds for the tape remaining indicator to operate after the tape starts moving.

c CINEMA Indication

(Menu OSD: p. 108)

d Digital Zoom and other Digital Functions

(Menu OSD: p. 108)
This display appears when the digital zoom function has been activated.

e Playback Effect

(Menu OSD: p. 110)
This display appears when SEPIA or MONO is selected in VCR menu.

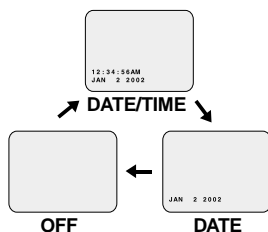
f Volume Display

(p. 33)
The volume bar appears when the volume of the built-in speaker is being adjusted.

g Date and Time Indication

(Menu OSD: pp. 109, 111)

As shown below, the date and time indication changes each time DATE/TIME is selected from the Palmcorder's MENU (Menu OSD: pp. 109, 111) or the DATE/TIME Button is pressed on the remote.



h Tape Speed Indication

(Menu OSD: p. 108)
Indicates the tape speed (SP or LP).

i MAGICVU (PV-DV402 only)

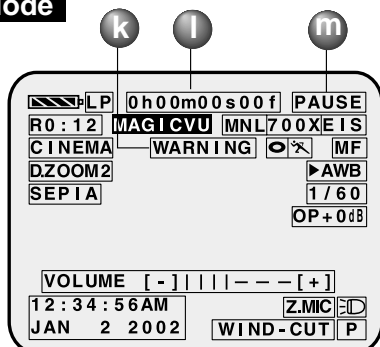
(Menu OSD: p. 109)
This display appears when MAGICVU is set to ON.

j MNL Indication

(pp. 28~31)
This display appears when AUTO/MANUAL is pressed to MANUAL.

Electronic Viewfinder/LCD Monitor Indications

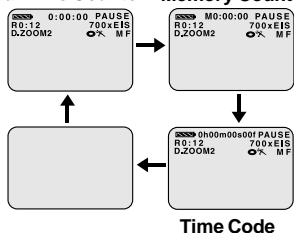
CAMERA/VCR Mode



k WARNING Indication (pp. 99, 100)
The warning displays appear in the EVF and the LCD monitor.

l Display ON/OFF and Counter/Time Code
The indication switches as shown below when the desired "DISPLAY" mode is selected from the menu. (Menu OSD: pp. 109, 111)
• When OFF is selected, all displays are turned off.

Linear Time Counter Memory Counter



Memory Counter M 0:00:00

The Palmcorder will stop whenever it reaches the point where the counter was previously set to M 0:00:00 during audio dub, fast forward, or rewind.

Time Code 0h00m00s00f

The Palmcorder calculates and displays exactly where you are on any tape in terms of hours, minutes, seconds, and frames (30 frames = 1 second).

• This display cannot be reset.

IMPORTANT NOTE:

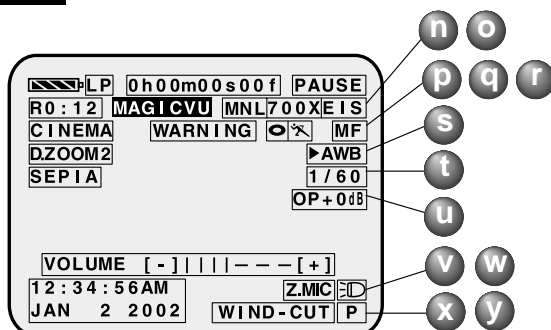
- Display must be set to ON for MF, AE, W.BALANCE or BACK LIGHT indications to be displayed on the EVF or LCD Panel when selected.
- C.RESET does not work when DISPLAY is set to OFF and T.CODE.

m Tape Mode Indications

REC	Recording.
PHOTO	PhotoShot recording.
PAUSE	Paused during recording.
▷	Playback.
II	Still.
▷▷	Slow (forward).
◁◁	Slow (reverse).
II▷	Frame Advance (forward).
◁II	Frame Advance (reverse).
R▷	Repeat Playback.
CHK	Recording Check.
FF	Fast forward.
REW	Rewind.
▷▷▷	FF Search.
◁◁◁	REW Search.
BLANK	Blank Search.
SEARCH	Index Search.

Electronic Viewfinder/LCD Monitor Indications

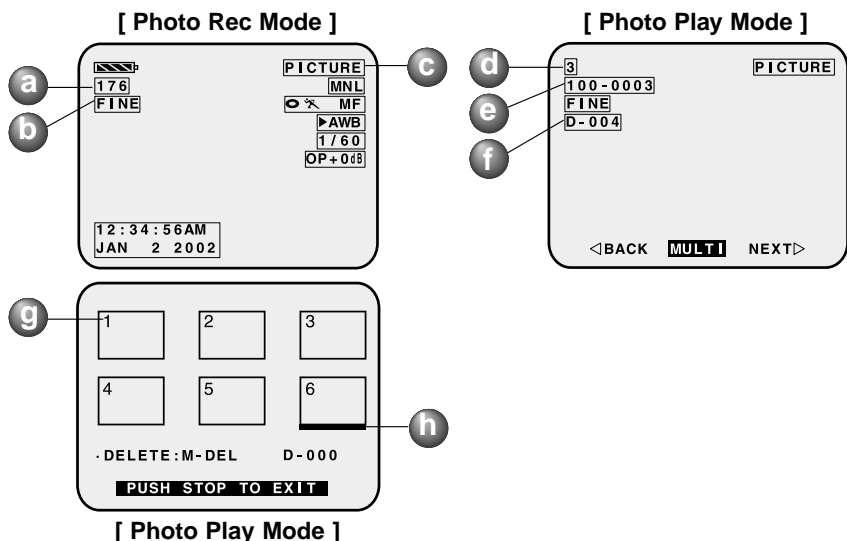
CAMERA/VCR Mode



- n Zoom Magnification Level** (p. 40)
- o Digital EIS Indications** (p. 42)
This display appears when EIS is pressed.
- p Backlight Indication** (p. 23)
This display appears when BACK LIGHT is pressed.
- q PROGRAM-AE Indication** (p. 24)
- r Manual Focus Indication** (p. 29)
- s White Balance Indication** (p. 28)
- t Shutter Mode Indication** (p. 30)
- u Iris Indication** (p. 31)
- v Z.MIC Indication** (Menu OSD: p. 108)
This display appears when ZOOM-MIC is set to ON.
- w Light Indication** (p. 9)
This display appears when LIGHT is set to ON.
- x WIND-CUT Indication** (Menu OSD: p. 108)
This display appears when WIND-CUT is set to ON.
- y Progressive Indication** (Menu OSD: p. 108)
This display appears when PROGRESSIVE is set to ON.

Electronic Viewfinder/LCD Monitor Indications

PHOTO Mode



a Image Page Remaining Indication (p. 48)

- Image pages left in selected mode.
- "000" flashes when memory is full.
- Memory capacity provided all pictures are taken in the same mode:
 - "NORMAL" mode
 - Approx. 70 images (Supplied 8 MB Memory Card)
 - "FINE" mode
 - Approx. 30 images (Supplied 8 MB Memory Card)

b REC MODE

- NORMAL or FINE mode.
- Image Size:
 - "NORMAL" mode
 - 640 x 480 pixels
 - "FINE" mode
 - 1 280 x 960 pixels

c Recording Mode

POWER is set to PICTURE.

d Directly/Image Number

e DCF NO. (Design rule for Camera File system) Indication (Menu OSD: p. 111)

f DPOF Indication (p. 54)

g Multi Image Playback page number

h Currently selected image is underlined in green

Index of Controls

Front View

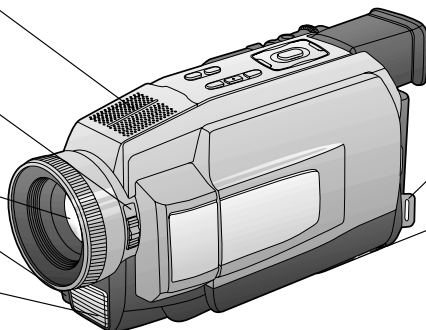
Built-in Twin Capsule 2-Way Microphone System

MAGICVU/OLUX (PV-DV402 only)
p. 25.

Lens

Remote Sensor
p. 9.

Built-in Light
pp. 9, 94.



Shoulder Strap Attachment Ring
p. 8.

BATT RELEASE
pp. 14, 15.

Side View

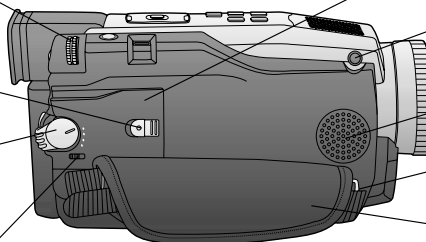
JOG KEY
pp. 16, 17.

M.FOCUS DIAL
p. 29.

M-CARD EJECT
p. 13.

POWER (VCR•OFF•CAMERA•M-CARD)
pp. 11, 12, 13.

M-CARD Lock
p. 13.



M-CARD Door
p. 13.

External Microphone Jack (PV-DV402 only)
p. 44.

Built-in Speaker
p. 33.

Shoulder Strap Attachment Ring
p. 8.

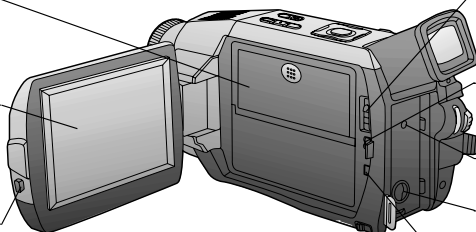
Hand Strap
p. 8.

Rear View

Cassette Compartment Cover
p. 7.

LCD (Liquid Crystal Display) Monitor
pp. 11, 12, 19, 32.

LCD-OPEN
pp. 11, 12, 19, 32.



TAPE EJECT
pp. 7, 11.

DV Input/Output (i.LINK) Connector
pp. 47, 72.

DC IN Terminal
p. 15.

S-VIDEO Output Connector
pp. 39, 46.

USB Terminal
pp. 58, 75, 81.

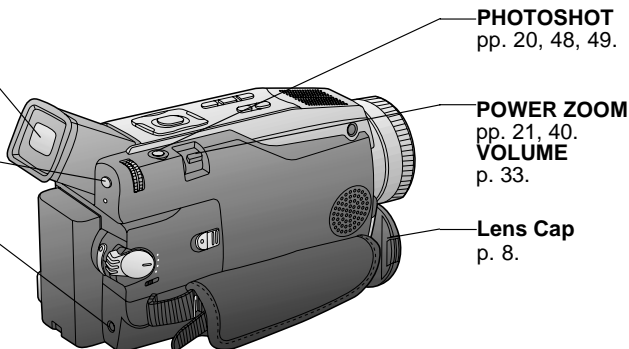
Index of Controls

Rear View

Electronic Viewfinder (EVF)
p. 12.

MENU
pp. 16, 17.

A/V Output Connector
pp. 39, 81.
PHONE
p. 32.



Top View

FOCUS
p. 29.

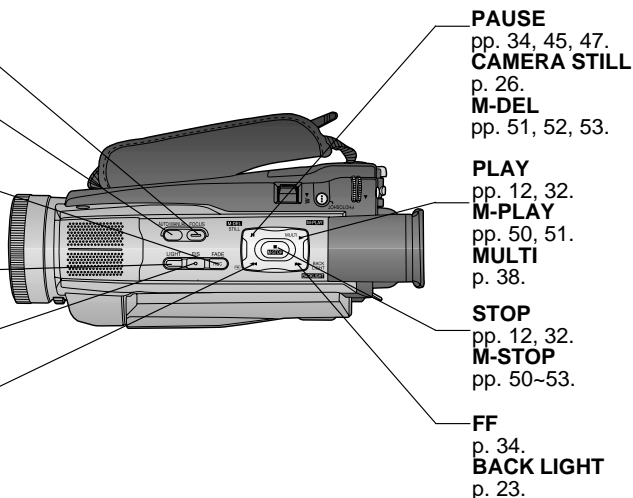
AUTO/MANUAL
pp. 28~31.

FADE
p. 25.
REC
p. 47.

LIGHT
p. 9.

EIS
p. 42.

REW
pp. 12, 32.
RECORDING CHECK
p. 22.

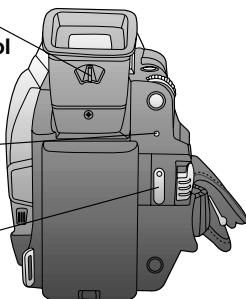


Back View

Vision Adjustment Control
pp. 12, 18.

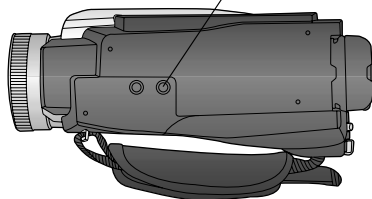
POWER Lamp
p. 18.

REC/PAUSE
pp. 12, 18.



Underside View

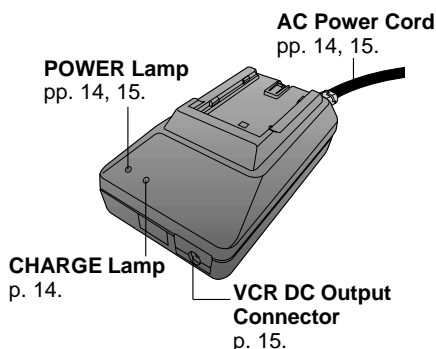
Tripod Receptacle



For Your Information

Index of Controls

AC Adaptor

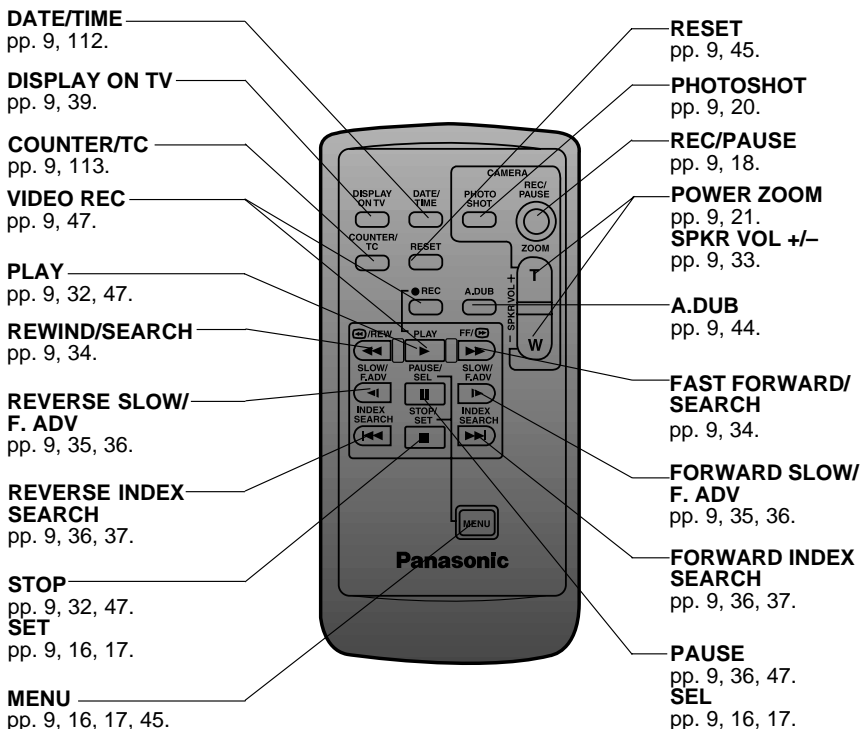


CAUTION:

This unit will operate on 110/120/220/240 V AC. An AC plug adaptor may be required for voltages other than 120V AC. Please contact either a local or foreign electrical parts distributor for assistance in selecting an alternate AC plug.

We recommend using the accessory power plug adaptor (VJSS0070) in an area which has special AC outlets.

Remote Control



- A**
- AC Adaptor ... 6, 14, 15, 92
 - Accessories (Optional) ... 92
 - Accessories (Supplied) ... 6
 - A/V Cable ... 6, 39, 81
 - Audio Adaptor ... 6, 81
 - Audio Dubbing ... 44, 45
 - Audio/Video Fade In/Out ... 25
- B**
- Backlight ... 23
 - Battery Pack ... 6, 11, 14, 92
 - Battery Remaining Indication ... 112
 - Battery Warning ... 99
 - Before Requesting Service ... 97, 98
 - Blank Search ... 33
 - Built-in Light ... 9
- C**
- Card PhotoShot ... 48
 - CD-ROM ... 6, 56
 - CINEMA Mode ... 23
 - Cleaning Care for Video Heads ... 97
 - Clock Battery ... 99
 - Clock Set ... 16
 - Concerning the Memory Card ... 94
 - Connecting Earphone ... 32
 - Copying from Digital Equipment ... 47
 - Copying your Tapes ... 46
- D**
- Date and Time Indication ... 112
 - DC Power Cable ... 6, 15, 92
 - Delete All Image Pages ... 52
 - Delete Specific Images ... 51
 - DEW Indication ... 99
 - Digital E.I.S. ... 42
 - Digital Functions ... 43
 - Digital PhotoShot™ Mode ... 20
 - Digital Video Cassette Tape ... 7
 - Digital Zoom ... 40, 41
 - DV Interface Cable (i.LINK) ... 47, 72, 92
 - DPOF Setting ... 54
- E**
- Easy Cassette Eject ... 7
 - Erase Protection Tab ... 7
 - EVF/LCD Monitor Indications ... 112~115
- F**
- Fast Forward/Rewind Check ... 34
 - Focus ... 29
 - Format the Memory Card ... 53
 - Frame by Frame Advance ... 36
- H**
- Hand Strap ... 8
 - High Speed Shutter ... 30
- I**
- Important Safeguards ... 3
 - Index of Controls ... 116~118
 - Index Search ... 36, 37
 - Iris ... 31
- J**
- Jog Search ... 37
- L**
- LCD/EVF Setting ... 19
 - Lens Cap ... 6, 8, 18
 - Lens Cap Strap ... 6, 8
 - Limited Warranty ... 102
- M**
- MagicPix™ Images ... 41
 - MagicVu™ IR Filter (0 Lux) (PV-DV402 only) ... 25
 - Memory Counter ... 113
 - Memory Stop Editing ... 45
 - MENU OSD ... 108~111
 - Memory Card ... 6, 13, 92
- O**
- On-Screen Display (OSD) ... 99, 100
- P**
- Palmcorder File Converter ... 78, 79
 - Palmcorder USB Device Driver/SD Drive ... 75~77
 - Photo Title ... 27
 - PHOTOVU/MPEG4 Movie Messenger™ System ... 58~71
 - Picture in Picture (PiP) ... 26
 - Playback Still Images ... 50
 - Playback using the LCD Monitor ... 32
 - Precautions ... 4
 - Program AE ... 24
 - Progressive PhotoShot™ Mode ... 20
- Q**
- Quick Guide ... 11, 12, 13
- R**
- Rapid Visual Search ... 34
 - Recording Check ... 22
 - Recording images From a Tape ... 49
 - Recording Still Pictures ... 22
 - Remote Control ... 6, 9, 10, 92, 118
 - Remote Controlling Two Palmcorders ... 10
 - Repeat Playback ... 33
 - Replacing the Bulb ... 94
 - Request for Service Notice ... 101
- S**
- Safety Precautions ... 2
 - Self Recording ... 22
 - Servicenter List ... 103
 - Shoulder Strap ... 6, 8
 - Simple Recording ... 18, 19
 - Slow Motion Playback ... 35
 - Spanish Quick Use Guide ... 104~107
 - Specifications ... 96
 - STILL Picture ... 34
 - Strobe Multi Mode ... 38
 - Supplying Power ... 14, 15
- T**
- Table of Contents ... 5
 - Tape Remaining Indications ... 112
 - Tape Speed ... 7
 - Tape Warning ... 99
 - Transferring Your Images (Macintosh) ... 90, 91
 - Transferring Your Images (Windows) ... 55, 56, 57
 - Transferring Your Images (i.LINK) (Windows) ... 72~74
- U**
- USB Cable ... 6, 58, 75, 81
 - Using the Palmcorder Menu ... 17
- V**
- Variable Speed Search ... 35
 - VHF Connecting Cable ... 46
 - Volume Display ... 33, 112
- W**
- Warning Indications ... 89
 - Web Camera ... 80~88
 - White Balance ... 28
 - WIND-CUT ... 31
- Z**
- Zoom In/Out ... 21
 - Zoom Microphone ... 21

Panasonic Consumer Electronics Company,
Division of Matsushita Electric Corporation of America
One Panasonic Way Secaucus, New Jersey 07094

Panasonic Sales Company ("PSC"),
Division of Matsushita Electric of Puerto Rico, Inc.
Ave. 65 de Infanteria, Km. 9.5 San Gabriel Industrial Park Carolina,
Puerto Rico 00985



Printed in Japan
LSQT0563A
S0102A0